

Search Report

EIC 1700

STIC Database Tracking Number: 230497

To: DANIEL METZMAIER

Location: REM-10A49

Art Unit: 1712

Monday, July 16, 2007

Case Serial Number: 09/918874

From: MEI HUANG

Location: EIC1700

REM-4B28 / REM-4B31

Phone: (571)272-3952

mei.huang@uspto.gov

Search Notes

Examiner METZMAIER:

Please feel free to contact me if you have any questions or if you would like to refine the search query. Thank you for using STIC services!

Regards,
Mei



SEARCH REQUEST FORM

JUL 10 REUJ

Scientific and Technical Information Center

Pat. & T.M. Office

REM 10A49 or
mailbox REM 10C18

Requester's Full Name: Daniel Hetermaier Examiner #: 67295 Date: 7-10-2007
Art Unit: 1712 Phone Number: 301-21089 Serial Number: 091918874
Mail Box and Bldg/Room Location: _____ Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc. if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): Seth Marder & Perry

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

- Focus on Markush Structures of claims 16, 17, and 18.
- Contact if you have questions.

STAFF USE ONLY

Searcher: MH
Searcher Phone #: _____
Searcher Location: _____
Date Searcher Picked Up: _____
Date Completed: 7/16/07
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Type of Search

NA Sequence (#) _____
AA Sequence (#) _____
Structure (#) _____
Bibliographic ✓
Litigation _____
Fulltext _____
Patent Family _____
Other _____

Vendors and cost where applicable

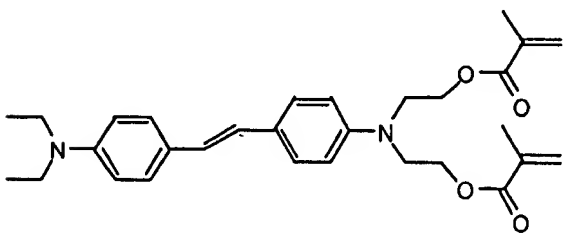
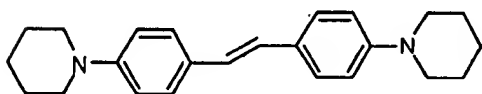
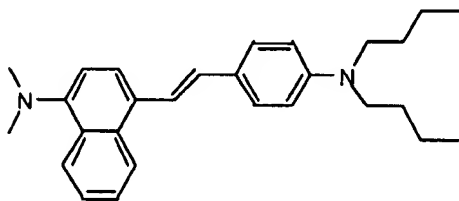
STN ✓
Dialog _____
Questel/Orbit _____
Dr.Link _____
Lexis/Nexis _____
Sequence Systems _____
WWW/Internet _____
Other (specify) _____

Listing of Claims:

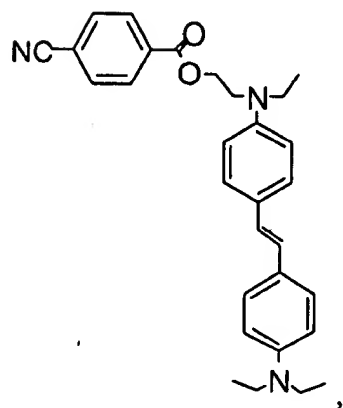
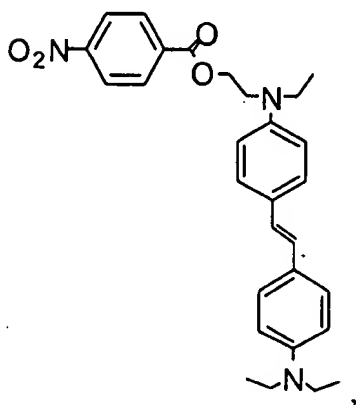
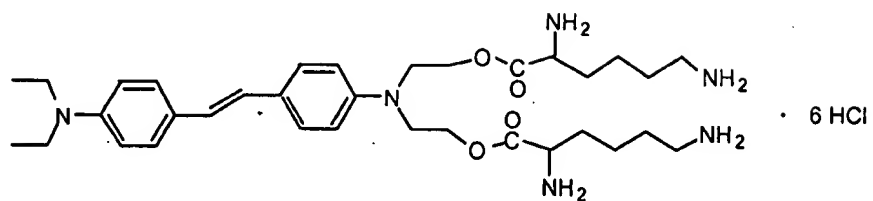
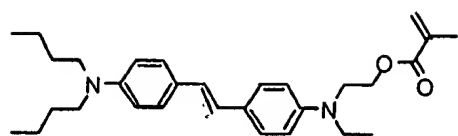
1-2. (Cancelled)

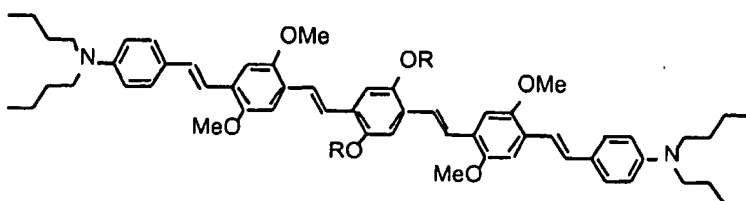
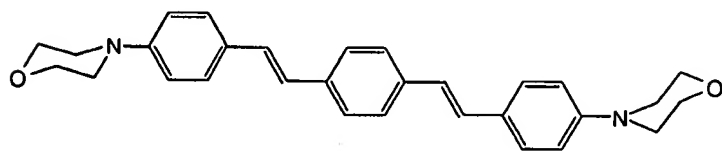
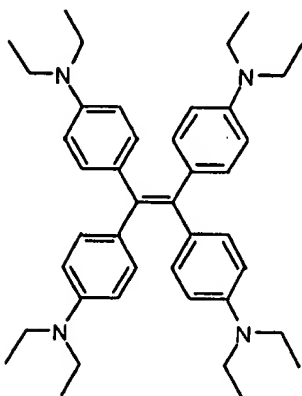
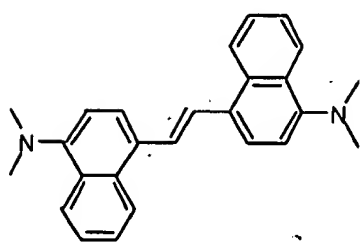
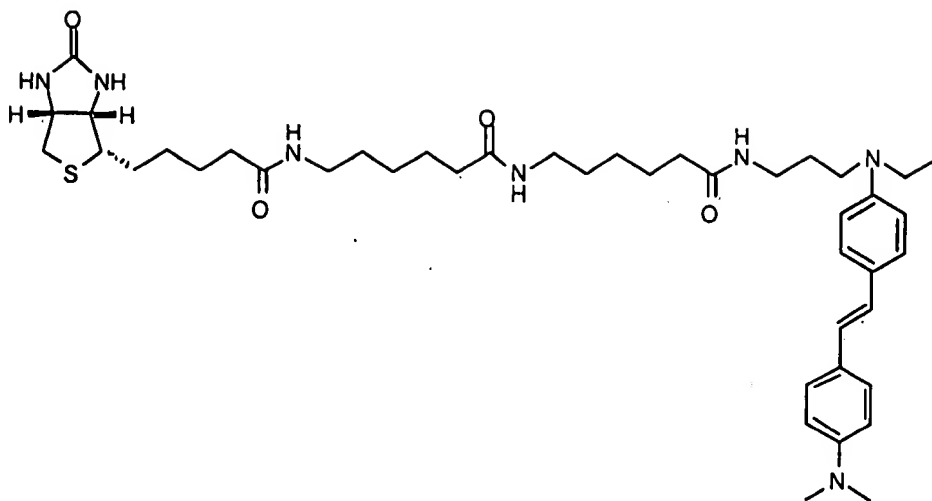
3. (Previously presented) A method for preparing a compound in an electronically excited state, comprising the steps of:

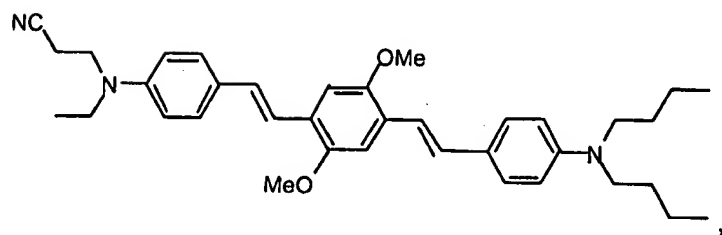
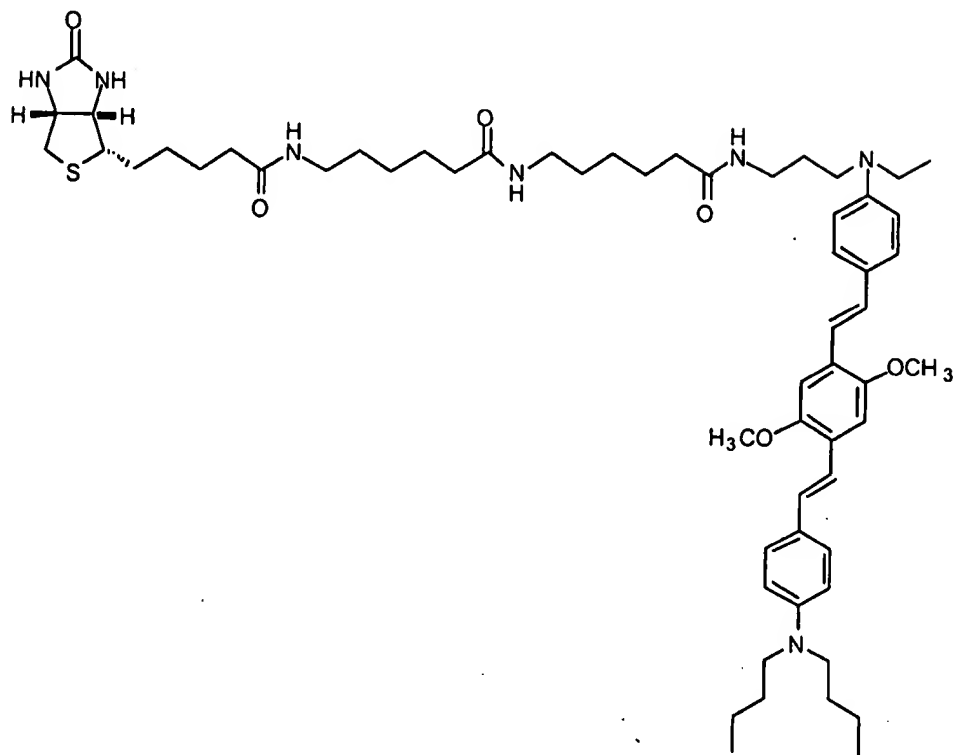
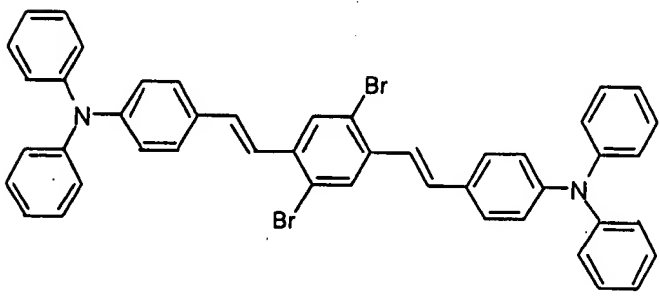
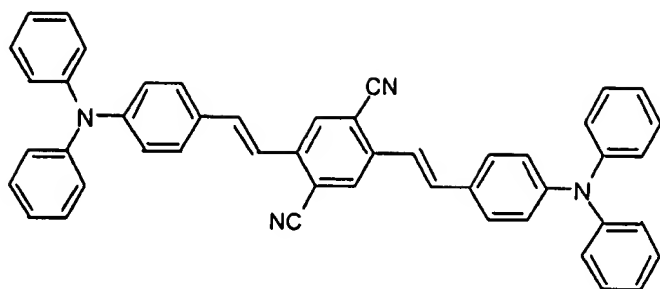
- a) exposing a compound having the formula $D_1-\Pi-D_2$ to radiation, wherein D_1 and D_2 are electron donor groups; and Π comprises a bridge of π -conjugated bonds connecting D_1 and D_2 ; and
- b) converting said compound to a multi-photon electronically excited state upon simultaneous absorption of at least two photons of said radiation by said compound, wherein the sum of the energies of all of said absorbed photons is greater than or equal to the transition energy from a ground state of said compound to said multi-photon excited state and wherein the energy of each absorbed photon is less than the transition energy between said ground state and the lowest single-photon excited state of said compound and is less than the transition energy between said multi-photon excited state and said ground state, wherein said compound is selected from the group consisting of

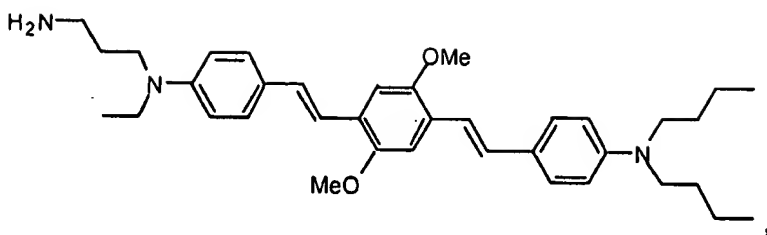


Serial No.: 09/918,874
Docket No.: 86102/8148







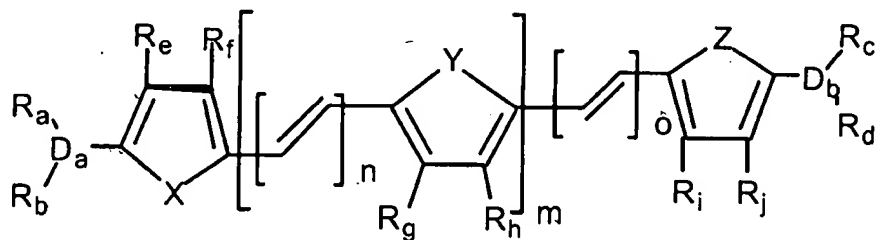


and mixtures thereof, where $R=(CH_2)_{11}CH_3$.

4-15. (Cancelled)

16. (Currently Amended) A method for preparing a compound in an electronically excited state, comprising the steps of:

- a) exposing a compound having the formula $D_1-\Pi-D_2$ to radiation, wherein D_1 and D_2 are electron donor groups; and Π comprises a bridge of π -conjugated bonds connecting D_1 and D_2 ; and
- b) converting said compound to a multi-photon electronically excited state upon simultaneous absorption of at least two photons of said radiation by said compound, wherein the sum of the energies of all of said absorbed photons is greater than or equal to the transition energy from a ground state of said compound to said multi-photon excited state and wherein the energy of each absorbed photon is less than the transition energy between said ground state and the lowest single-photon excited state of said compound and is less than the transition energy between said multi-photon excited state and said ground state, wherein said compound is further defined by a formula



where D_a is selected from the group consisting of N, O, S, and P;

where D_b is selected from the group consisting of N, O, S, and P;

m, n, o are integers such that $0 \leq m \leq 10$, $0 \leq n \leq 10$, and $0 \leq o \leq 10$, and $m + n + o \geq 1$; and

where:

X, Y, Z are independently selected from the group consisting of $CR_k=CR_l$, O, S, and N-R_m;

R_a, R_b, R_c, R_d are independently selected from the group consisting of H, a linear or branched alkyl group with up to 25 carbons, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta OR_{a1}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta NR_{a2}R_{a3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CONR_{a2}R_{a3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CN$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Cl$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Br$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta I$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta$ -Phenyl, a group of aromatic rings having up to 20 carbons in the aromatic ring framework, fused aromatic rings, vinyl, allyl, 4-styryl, acroyl, methacroyl, acrylonitrile, isocyanate, isothiocyanate, epoxides, strained ring olefins, $(-CH_2)_\delta SiCl_3$, $(-CH_2)_\delta Si(OCH_2CH_3)_3$, and $(-CH_2)_\delta Si(OCH_3)_3$, where $0 < \delta < 25$;

wherein one of R_a and R_b is not present when D_a is O or S, and wherein one of R_c and R_d is not present when D_b is O or S;

R_e, R_f, R_g, R_h, R_i, R_j, R_k, R_l and R_m are independently selected from the group consisting of, H, a linear or branched alkyl group with up to 25 carbons, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta OR_{b1}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta NR_{b2}R_{b3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CONR_{b2}R_{b3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CN$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Cl$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Br$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta I$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta$ -Phenyl, a group of aromatic rings having up to 20 carbons in the aromatic framework, fused aromatic rings, CHO, CN, NO₂, Br, Cl, I, phenyl, an acceptor group containing more than two carbon atoms, a functional group obtained by reaction with an amino acid, NR_{e1}R_{e2}, and OR_{e3};

where $0 < \alpha < 10$ and $1 < \beta < 25$;

R_{a1}, R_{a2}, and R_{a3} are independently selected from the group consisting of H, a linear or branched alkyl group with up to 25 carbons, and a functional group obtained by reaction with:

an amino acid, a polypeptide, adenine, guanine, tyrosine, cytosine, uracil, biotin, ferrocene, ruthenocene, cyanuric chloride, or methacryloyl chloride;

R_{b1}, R_{b2}, and R_{b3} are each independently a functional group obtained by reaction with:

an amino acid, a polypeptide, adenine, guanine, tyrosine, cytosine, uracil, biotin, ferrocene, ruthenocene, cyanuric chloride, or methacryloyl chloride;

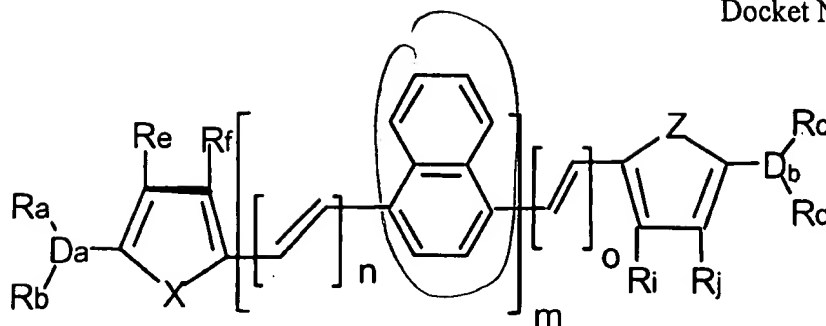
R_{e1} , R_{e2} , R_{e3} are independently selected from the group consisting of H, a linear or branched alkyl group with up to 25 carbons, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta OR_{g1}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta NR_{g2}R_{g3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CONR_{g2}R_{g3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CN$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Cl$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Br$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta I$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta$ -Phenyl, aryl groups, fused aromatic rings, vinyl, allyl, 4-styryl, acroyl, methacroyl, acrylonitrile, isocyanate, isothiocyanate, epoxides, strained ring olefins, $(-CH_2)_\delta SiCl_3$, $(-CH_2)_\delta Si(OCH_2CH_3)_3$, and $(-CH_2)_\delta Si(OCH_3)_3$, where $0 < \delta < 25$;

R_{g1} , R_{g2} , and R_{g3} are independently selected from the group consisting of H, a linear or branched alkyl group with up to 25 carbons, and a functional group obtained by reaction with: an amino acid, a polypeptide, adenine, guanine, tyrosine, cytosine, uracil, biotin, ferrocene, ruthenocene, cyanuric chloride, or methacryloyl chloride.

17. (Currently Amended) A method for preparing a compound in an electronically excited state, comprising the steps of:

a) exposing a compound having the formula D_1 - Π - D_2 to radiation, wherein D_1 and D_2 are electron donor groups; and Π comprises a bridge of π -conjugated bonds connecting D_1 and D_2 ; and

b) converting said compound to a multi-photon electronically excited state upon simultaneous absorption of at least two photons of said radiation by said compound, wherein the sum of the energies of all of said absorbed photons is greater than or equal to the transition energy from a ground state of said compound to said multi-photon excited state and wherein the energy of each absorbed photon is less than the transition energy between said ground state and the lowest single-photon excited state of said compound and is less than the transition energy between said multi-photon excited state and said ground state, wherein said compound is further defined by a formula



where D_a is selected from the group consisting of N, O, S, and P;

where D_b is selected from the group consisting of N, O, S, and P;

m, n, o are integers such that $0 \leq m \leq 10$, $0 \leq n \leq 10$, and $0 \leq o \leq 10$, and $m + n + o \geq 1$; and

where:

X, Y, Z are independently selected from the group consisting of $CR_k=CR_l$, O, S, and N- R_m ;

R_a, R_b, R_c, R_d are independently selected from the group consisting of H, a linear or branched alkyl group with up to 25 carbons, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta OR_{a1}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta NR_{a2}R_{a3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CONR_{a2}R_{a3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CN$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Cl$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Br$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta I$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta$ -Phenyl, a group of aromatic rings having up to 20 carbons in the aromatic ring framework, fused aromatic rings, vinyl, allyl, 4-styryl, acrolyl, methacroyl, acrylonitrile, isocyanate, isothiocyanate, epoxides, strained ring olefins, $(-CH_2)_\delta SiCl_3$, $(-CH_2)_\delta Si(OCH_2CH_3)_3$, and $(-CH_2)_\delta Si(OCH_3)_3$, where $0 < \delta < 25$;

wherein one of R_a and R_b is not present when D_a is O or S, and wherein one of R_c and R_d is not present when D_b is O or S;

$R_e, R_f, R_i, R_j, R_k, R_l$ and R_m are independently selected from the group consisting of, H, a linear or branched alkyl group with up to 25 carbons, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta OR_{b1}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta NR_{b2}R_{b3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CONR_{b2}R_{b3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CN$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Cl$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Br$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta I$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta$ -Phenyl, a group of aromatic rings having up to 20 carbons in the aromatic framework, fused aromatic rings, CHO, CN, NO₂, Br, Cl, I, phenyl, an acceptor group containing more than two carbon atoms, a functional group obtained by reaction with an amino acid, $NR_{e1}R_{e2}$, and OR_{e3} ;

where $0 < \alpha < 10$ and $1 < \beta < 25$;

R_{a1} , R_{a2} , and R_{a3} are independently selected from the group consisting of H, a linear or branched alkyl group with up to 25 carbons, and a functional group obtained by reaction with:
an amino acid, a polypeptide, adenine, guanine, tyrosine, cytosine, uracil, biotin, ferrocene, ruthenocene, cyanuric chloride, or methacryloyl chloride;

R_{b1} , R_{b2} , and R_{b3} are each independently a functional group obtained by reaction with:
an amino acid, a polypeptide, adenine, guanine, tyrosine, cytosine, uracil, biotin, ferrocene, ruthenocene, cyanuric chloride, or methacryloyl chloride;

R_{e1} , R_{e2} , R_{e3} are independently selected from the group consisting of H, a linear or branched alkyl group with up to 25 carbons, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta OR_{g1}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta NR_{g2}R_{g3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CONR_{g2}R_{g3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CN$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Cl$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Br$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta I$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta$ -Phenyl, aryl groups, fused aromatic rings, vinyl, allyl, 4-styryl, acroyl, methacroyl, acrylonitrile, isocyanate, isothiocyanate, epoxides, strained ring olefins, $(-CH_2)_\delta SiCl_3$, $(-CH_2)_\delta Si(OCH_2CH_3)_3$, and $(-CH_2)_\delta Si(OCH_3)_3$, where $0 < \delta < 25$;

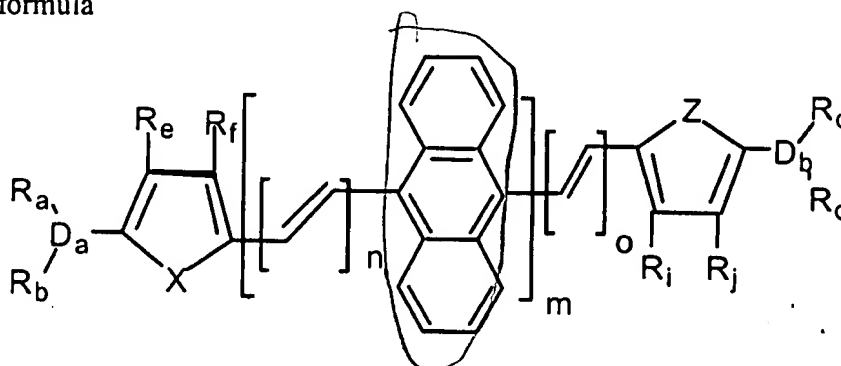
R_{g1} , R_{g2} , and R_{g3} are independently selected from the group consisting of H, a linear or branched alkyl group with up to 25 carbons, and a functional group obtained by reaction with:
an amino acid, a polypeptide, adenine, guanine, tyrosine, cytosine, uracil, biotin, ferrocene, ruthenocene, cyanuric chloride, or methacryloyl chloride.

18. (Currently Amended) A method for preparing a compound in an electronically excited state, comprising the steps of:

a) exposing a compound having the formula $D_1-\Pi-D_2$ to radiation, wherein D_1 and D_2 are electron donor groups; and Π comprises a bridge of π -conjugated bonds connecting D_1 and D_2 ; and

b) converting said compound to a multi-photon electronically excited state upon simultaneous absorption of at least two photons of said radiation by said compound, wherein the sum of the energies of all of said absorbed photons is greater than or equal to the transition energy from a ground state of said compound to said multi-photon excited state and wherein the

energy of each absorbed photon is less than the transition energy between said ground state and the lowest single-photon excited state of said compound and is less than the transition energy between said multi-photon excited state and said ground state, wherein said compound is further defined by a formula



where D_a is selected from the group consisting of N, O, S, and P;

where D_b is selected from the group consisting of N, O, S, and P;

m, n, o are integers such that $0 \leq m \leq 10$, $0 \leq n \leq 10$, and $0 \leq o \leq 10$, and $m + n + o \geq 1$; and

where:

X, Y, Z are independently selected from the group consisting of $CR_k=CR_l$, O, S, and N- R_m ;

R_a, R_b, R_c, R_d are independently selected from the group consisting of H, a linear or branched alkyl group with up to 25 carbons, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta OR_{a1}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta NR_{a2}R_{a3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CONR_{a2}R_{a3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CN$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Cl$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta Br$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta I$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta$ -Phenyl, a group of aromatic rings having up to 20 carbons in the aromatic ring framework, fused aromatic rings, vinyl, allyl, 4-styryl, acrolyl, methacroyl, acrylonitrile, isocyanate, isothiocyanate, epoxides, strained ring olefins, $(-CH_2)_\delta SiCl_3$, $(-CH_2)_\delta Si(OCH_2CH_3)_3$, and $(-CH_2)_\delta Si(OCH_3)_3$, where $0 < \delta < 25$;

wherein one of R_a and R_b is not present when D_a is O or S, and wherein one of R_c and R_d is not present when D_b is O or S;

$R_e, R_f, R_i, R_j, R_k, R_l$ and R_m are independently selected from the group consisting of, H, a linear or branched alkyl group with up to 25 carbons, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta OR_{b1}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta NR_{b2}R_{b3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CONR_{b2}R_{b3}$, $-(CH_2CH_2O)_\alpha-(CH_2)_\beta CN$,

$-(\text{CH}_2\text{CH}_2\text{O})_\alpha-(\text{CH}_2)_\beta\text{Cl}$, $-(\text{CH}_2\text{CH}_2\text{O})_\alpha-(\text{CH}_2)_\beta\text{Br}$, $-(\text{CH}_2\text{CH}_2\text{O})_\alpha-(\text{CH}_2)_\beta\text{I}$,
 $-(\text{CH}_2\text{CH}_2\text{O})_\alpha-(\text{CH}_2)_\beta\text{-Phenyl}$, a group of aromatic rings having up to 20 carbons in the aromatic framework, fused aromatic rings, CHO, CN, NO₂, Br, Cl, I, phenyl, an acceptor group containing more than two carbon atoms, a functional group obtained by reaction with an amino acid, NR_{e1}Re₂, and OR_{e3};

where $0 < \alpha < 10$ and $1 < \beta < 25$;

R_{a1}, R_{a2}, and R_{a3} are independently selected from the group consisting of H, a linear or branched alkyl group with up to 25 carbons, and a functional group obtained by reaction with: an amino acid, a polypeptide, adenine, guanine, tyrosine, cytosine, uracil, biotin, ferrocene, ruthenocene, cyanuric chloride, or methacryloyl chloride;

R_{b1}, R_{b2}, and R_{b3} are each independently a functional group obtained by reaction with: an amino acid, a polypeptide, adenine, guanine, tyrosine, cytosine, uracil, biotin, ferrocene, ruthenocene, cyanuric chloride, or methacryloyl chloride;

Re₁, Re₂, Re₃ are independently selected from the group consisting of H, a linear or branched alkyl group with up to 25 carbons, $-(\text{CH}_2\text{CH}_2\text{O})_\alpha-(\text{CH}_2)_\beta\text{OR}_{g1}$, $-(\text{CH}_2\text{CH}_2\text{O})_\alpha-(\text{CH}_2)_\beta\text{NR}_{g2}\text{R}_{g3}$, $-(\text{CH}_2\text{CH}_2\text{O})_\alpha-(\text{CH}_2)_\beta\text{CONR}_{g2}\text{R}_{g3}$, $-(\text{CH}_2\text{CH}_2\text{O})_\alpha-(\text{CH}_2)_\beta\text{CN}$, $-(\text{CH}_2\text{CH}_2\text{O})_\alpha-(\text{CH}_2)_\beta\text{Cl}$, $-(\text{CH}_2\text{CH}_2\text{O})_\alpha-(\text{CH}_2)_\beta\text{Br}$, $-(\text{CH}_2\text{CH}_2\text{O})_\alpha-(\text{CH}_2)_\beta\text{I}$, $-(\text{CH}_2\text{CH}_2\text{O})_\alpha-(\text{CH}_2)_\beta\text{-Phenyl}$, aryl groups, fused aromatic rings, vinyl, allyl, 4-styryl, acroyl, methacroyl, acrylonitrile, isocyanate, isothiocyanate, epoxides, strained ring olefins, $(-\text{CH}_2)_\delta\text{SiCl}_3$, $(-\text{CH}_2)_\delta\text{Si}(\text{OCH}_2\text{CH}_3)_3$, and $(-\text{CH}_2)_\delta\text{Si}(\text{OCH}_3)_3$, where $0 < \delta < 25$;

R_{g1}, R_{g2}, and R_{g3} are independently selected from the group consisting of H, a linear or branched alkyl group with up to 25 carbons, and a functional group obtained by reaction with: an amino acid, a polypeptide, adenine, guanine, tyrosine, cytosine, uracil, biotin, ferrocene, ruthenocene, cyanuric chloride, or methacryloyl chloride.



STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

➤ I am an examiner in Workgroup: Example: 1713

➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

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STRUCTURE FILE UPDATES: 15 JUL 2007 HIGHEST RN 942400-66-0

DICTIONARY FILE UPDATES: 15 JUL 2007 HIGHEST RN 942400-66-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=> d his nofile

(FILE 'HOME' ENTERED AT 14:45:54 ON 16 JUL 2007)

FILE 'HCAPLUS' ENTERED AT 14:46:08 ON 16 JUL 2007

L1 1 SEA ABB=ON PLU=ON US2002185634/PN
SEL RN

FILE 'REGISTRY' ENTERED AT 14:46:48 ON 16 JUL 2007

L2 122 SEA ABB=ON PLU=ON (100130-28-7/BI OR 109-77-3/BI OR
109995-80-4/BI OR 1120-48-5/BI OR 116942-09-7/BI OR
120-07-0/BI OR 1204-86-0/BI OR 1205-64-7/BI OR 121-44-8/B
I OR 122996-59-2/BI OR 123-31-9/BI OR 127278-74-4/BI OR
128184-34-9/BI OR 141-52-6/BI OR 143-15-7/BI OR 147621-98
-5/BI OR 148-87-8/BI OR 148717-08-2/BI OR 174904-78-0/BI
OR 179677-50-0/BI OR 180967-93-5/BI OR 18162-48-6/BI OR
196107-51-4/BI OR 197638-83-8/BI OR 202063-32-9/BI OR
208263-37-0/BI OR 208263-38-1/BI OR 208263-39-2/BI OR
208263-40-5/BI OR 208263-41-6/BI OR 208263-42-7/BI OR
208263-43-8/BI OR 208263-44-9/BI OR 214626-73-0/BI OR
220716-63-2/BI OR 223425-56-7/BI OR 223425-59-0/BI OR
232948-23-1/BI OR 249514-82-7/BI OR 2674-34-2/BI OR
2765-14-2/BI OR 27913-98-0/BI OR 288-32-4/BI OR 304466-98
-6/BI OR 304466-99-7/BI OR 304467-02-5/BI OR 304467-07-0/
BI OR 304467-08-1/BI OR 30525-89-4/BI OR 308286-91-1/BI
OR 31558-41-5/BI OR 320750-93-4/BI OR 3230-09-9/BI OR
32479-73-5/BI OR 34266-56-3/BI OR 349533-53-5/BI OR
352010-74-3/BI OR 352010-75-4/BI OR 352010-76-5/BI OR
352010-77-6/BI OR 352434-59-4/BI OR 352434-74-3/BI OR
352434-82-3/BI OR 352434-85-6/BI OR 352434-86-7/BI OR
352434-87-8/BI OR 352434-88-9/BI OR 352434-90-3/BI OR
352436-32-9/BI OR 352436-56-7/BI OR 352437-00-4/BI OR
352437-02-6/BI OR 352437-06-0/BI OR 352437-08-2/BI OR

352437-09-3/BI OR 352437-10-6/BI OR 352437-71-9/BI OR
352437-75-3/BI OR 352437-76-4/BI OR 352437-77-5/BI OR
352437-78-6/BI OR 352437-79-7/BI OR 352437-80-0/BI OR
352437-81-1/BI OR 352437-82-2/BI OR 352437-83-3/BI OR
352437-85-5/BI OR 352437-86-6/BI OR 352437-94-6/BI OR
352438-01-8/BI OR 352438-03-0/BI OR 352438-04-1/BI OR
352438-11-0/BI OR 352438-13-2/BI OR 352438-15-4/BI OR
352438-18-7/BI OR 352438-22-3/BI OR 352438-24-5/BI OR
352438-27-8/BI OR 4096-20-2/BI OR 4181-05-9/BI OR
50-00-0/BI OR
D SCA

L3 FILE 'HCAPLUS' ENTERED AT 14:53:10 ON 16 JUL 2007
1 SEA ABB=ON PLU=ON L1 AND L2

L4 FILE 'REGISTRY' ENTERED AT 14:54:24 ON 16 JUL 2007
1 SEA ABB=ON PLU=ON L2 AND PMS/CI
D SCA

FILE 'STNGUIDE' ENTERED AT 14:54:40 ON 16 JUL 2007

L5 FILE 'LREGISTRY' ENTERED AT 15:13:47 ON 16 JUL 2007
STR
L6 STR L5

FILE 'REGISTRY' ENTERED AT 15:17:28 ON 16 JUL 2007
L7 50 SEA SSS SAM L5 AND L6
L8 STR 72057-75-1
L9 STR L5
L10 STR L9
L11 0 SEA SSS SAM L9 AND L10

FILE 'STNGUIDE' ENTERED AT 15:21:33 ON 16 JUL 2007

L12 FILE 'LREGISTRY' ENTERED AT 15:23:44 ON 16 JUL 2007
STR L5

L13 FILE 'REGISTRY' ENTERED AT 15:25:02 ON 16 JUL 2007
2 SEA SSS SAM L12 AND L6

L14 FILE 'LREGISTRY' ENTERED AT 15:25:46 ON 16 JUL 2007
STR
L15 STR

L16 FILE 'REGISTRY' ENTERED AT 15:28:24 ON 16 JUL 2007
50 SEA SSS SAM L14 AND L15

FILE 'STNGUIDE' ENTERED AT 15:30:54 ON 16 JUL 2007

FILE 'REGISTRY' ENTERED AT 15:31:25 ON 16 JUL 2007
L17 SCR 1839
L18 3 SEA SSS SAM L12 AND L6 AND L17
L19 STR L12
L20 STR L6
L21 46 SEA SSS SAM L19 AND L20 AND L17

FILE 'STNGUIDE' ENTERED AT 15:36:10 ON 16 JUL 2007

L22 FILE 'REGISTRY' ENTERED AT 15:39:00 ON 16 JUL 2007
STR L19

L23 11 SEA SSS SAM L22 AND L20 AND L17
FILE 'STNGUIDE' ENTERED AT 15:39:50 ON 16 JUL 2007
FILE 'REGISTRY' ENTERED AT 15:44:32 ON 16 JUL 2007
L24 STR L20
L25 SCR 1840
L26 16 SEA SSS SAM L22 AND L20 AND L24 AND L25
L27 15 SEA SSS SAM L22 AND L20 AND L24
L28 15 SEA SSS SAM L22 AND L20
FILE 'STNGUIDE' ENTERED AT 15:46:52 ON 16 JUL 2007
FILE 'REGISTRY' ENTERED AT 15:51:17 ON 16 JUL 2007
L29 1 SEA ABB=ON PLU=ON PYRROLE/CN
D SCA
FILE 'LREGISTRY' ENTERED AT 15:57:36 ON 16 JUL 2007
L30 STR
FILE 'REGISTRY' ENTERED AT 15:58:33 ON 16 JUL 2007
D RN L29
L31 STR 109-97-7
FILE 'LREGISTRY' ENTERED AT 15:59:22 ON 16 JUL 2007
L32 STR
FILE 'REGISTRY' ENTERED AT 16:02:10 ON 16 JUL 2007
L33 50 SEA SSS SAM L20 AND L32 AND L17
L34 25 SEA SSS SAM L22 AND L32 AND L17
L35 18 SEA SSS SAM L22 AND L32 AND L25
L36 STR
L37 17 SEA SSS SAM L22 AND L32 NOT L36 AND L25
L38 SCR 2127
L39 18 SEA SSS SAM L22 AND L32 NOT L36 AND L25 NOT L38
FILE 'STNGUIDE' ENTERED AT 16:11:06 ON 16 JUL 2007
FILE 'REGISTRY' ENTERED AT 16:12:15 ON 16 JUL 2007
L40 91 SEA ABB=ON PLU=ON L2 AND NR>=2
FILE 'STNGUIDE' ENTERED AT 16:13:16 ON 16 JUL 2007
FILE 'REGISTRY' ENTERED AT 16:17:09 ON 16 JUL 2007
FILE 'STNGUIDE' ENTERED AT 16:17:26 ON 16 JUL 2007
FILE 'REGISTRY' ENTERED AT 16:22:40 ON 16 JUL 2007
L41 1 SEA ABB=ON PLU=ON 89889-52-1/RN
L42 1 SEA ABB=ON PLU=ON 77278-63-8/RN
L43 1 SEA ABB=ON PLU=ON 352437-09-3/RN
L44 1 SEA ABB=ON PLU=ON 352437-79-7/RN
L45 1 SEA ABB=ON PLU=ON 88542-15-8/RN
L46 1 SEA ABB=ON PLU=ON 352437-02-6/RN
L47 1 SEA ABB=ON PLU=ON 352434-88-9/RN
L48 1 SEA ABB=ON PLU=ON 603-35-0/RN
L49 1 SEA ABB=ON PLU=ON 1204-86-0/RN
L50 1 SEA ABB=ON PLU=ON 1205-64-7/RN
L51 1 SEA ABB=ON PLU=ON 2765-14-2/RN
L52 1 SEA ABB=ON PLU=ON 4096-20-2/RN

L53 1 SEA ABB=ON PLU=ON 4181-05-9/RN
 L54 1 SEA ABB=ON PLU=ON 7044-91-9/RN
 L55 1 SEA ABB=ON PLU=ON 27913-98-0/RN
 L56 1 SEA ABB=ON PLU=ON 74228-25-4/RN
 L57 1 SEA ABB=ON PLU=ON 85872-85-1/RN
 L58 1 SEA ABB=ON PLU=ON 89419-51-2/RN
 L59 1 SEA ABB=ON PLU=ON 174904-78-0/RN
 L60 1 SEA ABB=ON PLU=ON 220716-63-2/RN
 L61 1 SEA ABB=ON PLU=ON 232948-23-1/RN
 L62 1 SEA ABB=ON PLU=ON 249514-82-7/RN
 L63 1 SEA ABB=ON PLU=ON 352437-00-4/RN
 L64 1 SEA ABB=ON PLU=ON 352437-86-6/RN
 L65 1 SEA ABB=ON PLU=ON 197638-83-8/RN
 L66 25 SEA ABB=ON PLU=ON (L41 OR L42 OR L43 OR L44 OR L45 OR
 L46 OR L47 OR L48 OR L49 OR L50 OR L51 OR L52 OR L53 OR
 L54 OR L55 OR L56 OR L57 OR L58 OR L59 OR L60 OR L61 OR
 L62 OR L63 OR L64 OR L65)
 L67 66 SEA ABB=ON PLU=ON L40 NOT L66

FILE 'HCAPLUS' ENTERED AT 16:37:25 ON 16 JUL 2007

L68 2630 SEA ABB=ON PLU=ON L67
 L69 QUE ABB=ON PLU=ON ?PHOTO?
 L70 QUE ABB=ON PLU=ON OPTICAL?
 L71 99 SEA ABB=ON PLU=ON L67 (L) L69
 L72 23 SEA ABB=ON PLU=ON L67 (L) L70
 L73 1462345 SEA ABB=ON PLU=ON (OPTICAL? OR ELECTRON?)/SC, SX
 L74 76 SEA ABB=ON PLU=ON L68 AND L73
 L75 80 SEA ABB=ON PLU=ON (L71 OR L72 OR L74) AND (1840-2001)/P
 Y, PRY, AY
 L76 47 SEA ABB=ON PLU=ON (L71 OR L72 OR L74) AND (1840-1997)/P
 Y, PRY, AY
 L77 43 SEA ABB=ON PLU=ON (L71 OR L72 OR L74) AND (1840-1996)/P
 Y, PRY, AY
 L78 39 SEA ABB=ON PLU=ON L77 NOT L72

FILE 'STNGUIDE' ENTERED AT 16:54:47 ON 16 JUL 2007

FILE 'REGISTRY' ENTERED AT 17:00:17 ON 16 JUL 2007

L79 1 SEA ABB=ON PLU=ON 116942-09-7/RN
 L80 1 SEA ABB=ON PLU=ON 179677-50-0/RN
 L81 1 SEA ABB=ON PLU=ON 180967-93-5/RN
 L82 1 SEA ABB=ON PLU=ON 92-54-6/RN
 L83 1 SEA ABB=ON PLU=ON 72057-75-1/RN
 L84 1 SEA ABB=ON PLU=ON 109995-80-4/RN
 L85 1 SEA ABB=ON PLU=ON 62555-98-0/RN
 L86 1 SEA ABB=ON PLU=ON 34266-56-3/RN

FILE 'HCAPLUS' ENTERED AT 17:04:04 ON 16 JUL 2007

L87 47 SEA ABB=ON PLU=ON L79
 L88 3 SEA ABB=ON PLU=ON L80
 L89 2 SEA ABB=ON PLU=ON L81
 L90 2492 SEA ABB=ON PLU=ON L82
 L91 10 SEA ABB=ON PLU=ON L83
 L92 5 SEA ABB=ON PLU=ON L84
 L93 3 SEA ABB=ON PLU=ON L85
 L94 7 SEA ABB=ON PLU=ON L86
 L95 15 SEA ABB=ON PLU=ON L78 AND L87
 L96 2 SEA ABB=ON PLU=ON L78 AND L88
 L97 1 SEA ABB=ON PLU=ON L78 AND L89
 L98 10 SEA ABB=ON PLU=ON L78 AND L90

L99 4 SEA ABB=ON PLU=ON L78 AND L91
L100 3 SEA ABB=ON PLU=ON L78 AND L92
L101 2 SEA ABB=ON PLU=ON L78 AND L93
L102 4 SEA ABB=ON PLU=ON L78 AND L94

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 17:18:40 ON 16 JUL 2007

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FILE COVERS 1907 - 16 Jul 2007 VOL 147 ISS 4

FILE LAST UPDATED: 15 Jul 2007 (20070715/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l72 ibib abs hitstr hitind 1-23

L72 ANSWER 1 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:471663 HCAPLUS

DOCUMENT NUMBER: 145:154562

TITLE: Two-Photon Photosensitized Production of Singlet Oxygen: Optical and Optoacoustic Characterization of Absolute Two-Photon Absorption Cross Sections for Standard Sensitizers in Different Solvents

AUTHOR(S): Arnbjerg, Jacob; Johnsen, Mette; Frederiksen, Peter K.; Braslavsky, Silvia E.; Ogilby, Peter R.

CORPORATE SOURCE: Department of Chemistry, University of Aarhus, Aarhus, DK-8000, Den.

SOURCE: Journal of Physical Chemistry A (2006), 110(23), 7375-7385

CODEN: JPCAFH; ISSN: 1089-5639

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Singlet mol. O, O₂(a¹Δ_g), can be produced upon resonant 2-photon excitation of a photosensitizer. Two mols. that have received recent attention in studies of nonlinear organic materials were characterized for use as standard 2-photon sensitizers: 2,5-dicyano-1,4-bis(2-(4-diphenylaminophenyl)vinyl)-benzene, CNPhVB, and 2,5-dibromo-1,4-bis(2-(4-diphenylaminophenyl)vinyl)-benzene, BrPhVB. Absolute 2-photon absorption cross sections, δ, were

independently determined for these mols. using 2 techniques that have heretofore not been applied to this problem: an optical technique (time-resolved detection of O₂(a¹Δ_g) phosphorescence) and a nonoptical technique (a time-resolved laser-induced optoacoustic experiment). For expts. performed in toluene, a solvent commonly used for such nonlinear optical studies, appreciable absorption by the solvent itself complicates the measurements. In cyclohexane, however, δ values could be obtained without the interfering effects of solvent absorption. The authors discuss key aspects of the resp. techniques used to quantify values of δ. The information reported herein provides some explanation for the lack of consensus that is routinely observed in published values of δ, certainly for expts. performed in aromatic solvents such as toluene and benzene.

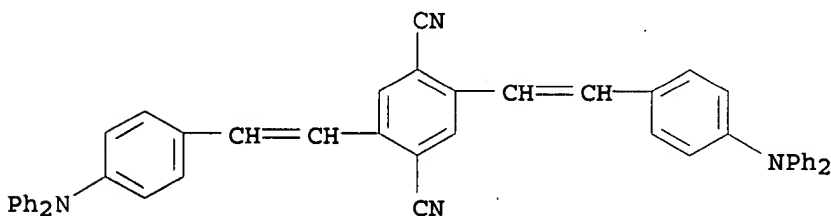
IT 208263-43-8 214626-73-0

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)

(optical and optoacoustic characterization of absolute two-photon absorption in different solvents for photosensitizers for singlet oxygen production)

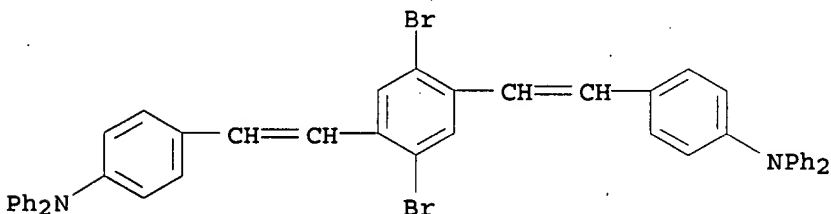
RN 208263-43-8 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 214626-73-0 HCAPLUS

CN Benzenamine, 4,4'-[(2,5-dibromo-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-diphenyl]- (9CI) (CA INDEX NAME)



CC 73-2 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74

IT 208263-43-8 214626-73-0

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)

(optical and optoacoustic characterization of absolute two-photon absorption in different solvents for photosensitizers for singlet oxygen production)

REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L72 ANSWER 2 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2005:732624 HCAPLUS
 DOCUMENT NUMBER: 143:212172
 TITLE: Preparation of optically active 1,1'-binaphthyl
 quaternary ammonium salts having axial asymmetry
 and process for producing α -amino acid and
 derivative thereof with the quaternary ammonium
 salts
 INVENTOR(S): Maruoka, Keiji
 PATENT ASSIGNEE(S): Nagase & Co., Ltd., Japan
 SOURCE: PCT Int. Appl., 311 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005073196	A1	20050811	WO 2005-JP1623	20050127
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2549431	A1	20050811	CA 2005-2549431	20050127
EP 1712549	A1	20061018	EP 2005-704383	20050127
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
CN 1914177	A	20070214	CN 2005-80003716	20050127
IN 2006KN01887	A	20070511	IN 2006-KN1887	20060706
US 2007161624	A1	20070712	US 2006-587467	20060724
US 2007135654	A1	20070614	US 2007-626228	20070123
PRIORITY APPLN. INFO.:			JP 2004-23317	A 200401

30

JP 2004-56659

A

200403
01

WO 2005-JP1623

W

200501
27

US 2006-587467

A1

200607
24

OTHER SOURCE(S): MARPAT 143:212172
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Quaternary ammonium salts of the following formula (I) [R1-R6, R1'-R6' = H, NR2OR21 (wherein R = H, C1-4 alkyl), cyano, NO2, CONH2, mono- or di(C1-4 alkyl)carbamoyl, NHCOR9 (R9 = linear or branched C1-4 alkyl), each linear or branched or cyclic C1-6 alkyl, C2-6 alkenyl, or C2-6 alkynyl, each (un)substituted aralkyl, heteroaralkyl, aryl, or heteroaryl; R7, R8 = H, each linear or branched or cyclic C1-12 alkyl, C2-12 alkenyl, or C2-12 alkynyl, (un)substituted aryl, or heteroaryl, N-(un)substituted carbamoyloxyalkyl, carbamoylalkyl, or acylaminoalkyl, etc.; X- = halogen anions, SCN-, HSO4-, HF2-] are prepared by 1,1'-binaphthyl-2,2'-dimethylene bromide derivs. which can be produced through a relatively small number of steps with an easily available secondary amines. These compds. are useful as chiral phase-transfer catalysts. α -Amino acids or derivs. of formula R14R15C:NC*(R16)(R18)CO2R17 [R14, R15 = H, (un)substituted aryl; provided that R14 = R15 \neq H; R16 = H, each linear or branched or cyclic C1-10 alkyl, C2-6 alkenyl, or C2-6 alkynyl, each (un)substituted aralkyl, heteroaralkyl, or heteroaryl; R17 = linear or branched or cyclic C1-8 alkyl; R18 = each linear or branched or cyclic C1-10 alkyl, C3-9 allyl or substituted C3-9 allyl, C2-6 alkenyl, or C2-6 alkynyl, each (un)substituted aralkyl, heteroaralkyl, aryl, heteroaryl, or aryl] are prepared by reaction of α -amino acid derivs. of formula R14R15C:NC*H(R16)CO2R17 (R14-R17 = same as above) with R18-W (R18 = same as above; W = functional group having leaving ability) in the presence of chiral quaternary ammonium salt I. Thus, a mixture of 280 mg (S)-2,2'-bis(bromomethyl)-3,3'-bis(3,4,5-trifluorophenyl)-1,1'-binaphthalene, 140 μ L dibutylamine, and 82 mg K2CO3 in 5 mL MeCN was stirred under refluxing for 10 h to give 83% quaternary ammonium salt (II). CsOH.H2O (5 equiv) was added to a mixture of 134 mg N-(p-chlorobenzylidene)-L-alanine tert-Bu ester, 1 mol% II, and 1.2 equiv benzyl bromide in 2 mL toluene at 0° and stirred at 0° for 3 h, followed by work up and treatment with a mixture of 0.5 M aqueous citric acid and THF at room temperature for 1 h, 82% amino acid derivative (III).

IT 92-54-6, 1-Phenylpiperazine

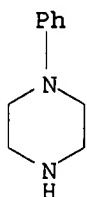
RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of optically active 1,1'-binaphthyl quaternary

ammonium salts as chiral phase-transfer catalysts for preparation
 α -amino acids and derivs. thereof by asym. alkylation of
 amino acid derivs.)

RN 92-54-6 HCAPLUS

CN Piperazine, 1-phenyl- (CA INDEX NAME)



IC ICM C07D223-14

ICS C07D498-10; C07D487-10; C07D471-10; C07D405-14; C07D409-14;
 C07C249-02; C07C251-24; C07C229-34; C07C227-10

CC 34-2 (Amino Acids, Peptides, and Proteins)

IT 74-88-4, Methyl iodide, reactions 75-26-3, Isopropyl bromide
 91-21-4, 1,2,3,4-Tetrahydroisoquinoline 92-54-6,
 1-Phenylpiperazine 100-39-0, Benzyl bromide 101-83-7,
 Dicyclohexylamine 106-95-6, Allyl bromide, reactions 106-96-7,
 Propargyl bromide 109-89-7, Diethylamine, reactions 110-96-3,
 Diisobutylamine 111-92-2, Dibutylamine 123-75-1, Pyrrolidine,
 reactions 124-02-7, Diallylamine 124-40-3, Dimethylamine,
 reactions 358-23-6, Trifluoromethanesulfonic anhydride 768-35-4,
 (m-Fluorophenyl)boronic acid 1120-49-6 1121-92-2, Azacyclooctane
 1423-26-3, [3-(Trifluoromethyl)phenyl]boronic acid 1582-24-7,
 (2,3,4,5,6-Pentafluorophenyl)boronic acid 1679-18-1,
 (p-Chlorophenyl)boronic acid 1765-93-1, (p-Fluorophenyl)boronic
 acid 1993-03-9, (2-Fluorophenyl)boronic acid 4392-24-9, Cinnamyl
 bromide 5122-94-1, (Biphenyl-4-yl)boronic acid 5292-43-3,
 tert-Butyl bromoacetate 5720-07-0, (4-Methoxyphenyl)boronic acid
 10365-98-7, (3-Methoxyphenyl)boronic acid 13331-27-6,
 (m-Nitrophenyl)boronic acid 18531-94-7, (R)-1,1'-Binaphthalene-
 2,2'-diol 18531-96-9 24067-17-2, (4-Nitrophenyl)boronic acid
 32316-92-0, (2-Naphthyl)boronic acid 51207-66-0 63503-60-6,
 (m-Chlorophenyl)boronic acid 66943-05-3, 1-Aza-4,7,10,13-
 tetraoxacyclopentadecane 71597-85-8, (p-Hydroxyphenyl)boronic acid
 73852-19-4, [3,5-Bis(trifluoromethyl)phenyl]boronic acid
 81477-94-3 94839-07-3, (3,4-Methylenedioxyphenyl)boronic acid
 98437-23-1, (Benzo[thiophen-2-yl]boronic acid 121219-16-7,
 (2,3-Difluorophenyl)boronic acid 126747-14-6, (4-
 Cyanophenyl)boronic acid 128388-54-5, (3,5-Diphenylphenyl)boronic
 acid 128796-39-4, [4-(Trifluoromethyl)phenyl]boronic acid
 139301-27-2, [p-(Trifluoromethoxy)phenyl]boronic acid 142274-97-3
 143418-49-9, 3,4,5-Trifluorophenylboronic acid 149104-88-1,
 [4-(Methanesulfonyl)phenyl]boronic acid 150255-96-2,
 (m-Cyanophenyl)boronic acid 151169-75-4, (3,4-
 Dichlorophenyl)boronic acid 156545-07-2, (3,5-
 Difluorophenyl)boronic acid 168267-41-2, (3,4-
 Difluorophenyl)boronic acid 326793-14-0 326793-21-9
 625122-29-4, [3,5-Bis[3,5-bis(trifluoromethyl)phenyl]phenyl]boronic
 acid 862248-92-8, [3,4-Bis(tert-butyl)phenyl]boronic acid
 862248-93-9, (3,4,5-Trichlorophenyl)boronic acid 862248-94-0,
 Bis(1-methoxyethyl)amine 862248-95-1, [3,5-Bis(3,4,5-
 trifluorophenyl)phenyl]boronic acid 862299-86-3
 RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of optically active 1,1'-binaphthyl quaternary ammonium salts as chiral phase-transfer catalysts for preparation α -amino acids and derivs. thereof by asym. alkylation of amino acid derivs.)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 3 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:679603 HCAPLUS

DOCUMENT NUMBER: 142:374781

TITLE: Turning on fluorescence by two-photon excitation and polymerization: toward a 3-D optical memory device

AUTHOR(S): Dyer, Daniel J.; Cumpston, Brian H.; McCord-Maughton, Dianne; Thayumanavan, S.; Barlow, Stephen; Perry, Joseph W.; Marder, Seth R.

CORPORATE SOURCE: The Beckman Institute, California Institute of Technology, Pasadena, CA, 91125, USA

SOURCE: Nonlinear Optics, Quantum Optics (2004), 31(1-4), 175-184

CODEN: NOQOAP; ISSN: 1543-0537

PUBLISHER: Old City Publishing, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB New materials have been synthesized composed of a 4,4'-bis(dialkylamino)stilbene two-photon chromophore covalently attached to one or two methacrylate ester groups. The fluorescence observed in the non-functionalized chromophore is significantly quenched in the methacrylate-functionalized species, but is partially restored on polymerization of the methacrylate groups induced by either one- or two-photon excitation. We have demonstrated the potential utility of these materials in high-d. data storage applications by writing fluorescent bits in a composite containing these materials using two-photon excitation, the contrast between the fluorescence from the bits and the background being ca. 3.

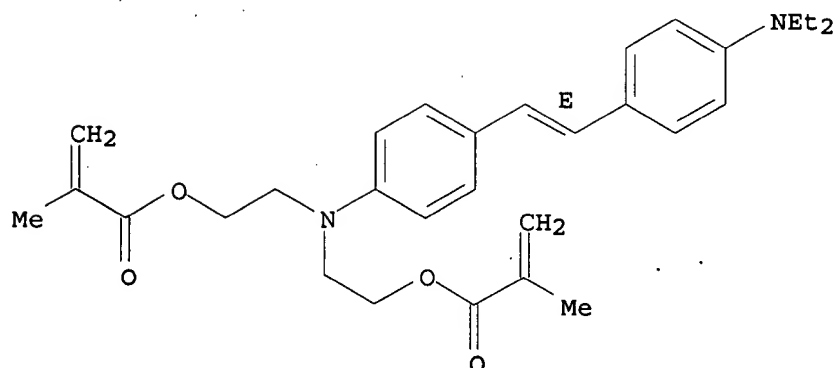
IT 223425-56-7P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(chromophore; preparation of methacrylate-functionalized two-photon chromophores and their fluorescence properties and applications for three-dimensional optical memory devices)

RN 223425-56-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, [[4-[(1E)-2-[4-(diethylamino)phenyl]ethenyl]phenyl]imino]di-2,1-ethanediyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 352438-24-5P

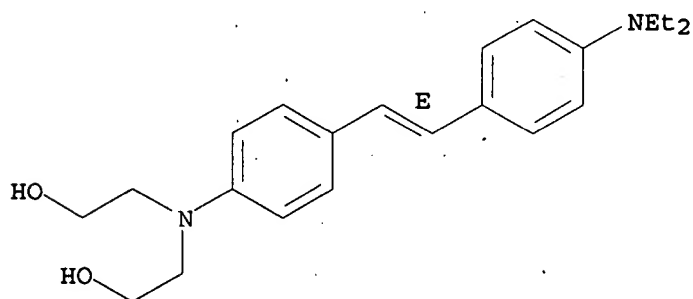
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
 RACT (Reactant or reagent)

(preparation of methacrylate-functionalized two-photon chromophores
 and their fluorescence properties and applications for
 three-dimensional optical memory devices)

RN 352438-24-5 HCAPLUS

CN Ethanol, 2,2'-[[4-[(1E)-2-[4-(diethylamino)phenyl]ethenyl]phenyl]imi
 nol]bis- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 35, 76

IT 223425-56-7P 849585-20-2P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or
 engineered material use); PREP (Preparation); USES (Uses)

(chromophore; preparation of methacrylate-functionalized two-photon
 chromophores and their fluorescence properties and applications
 for three-dimensional optical memory devices)

IT 352438-24-5P 579492-34-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
 RACT (Reactant or reagent)

(preparation of methacrylate-functionalized two-photon chromophores
 and their fluorescence properties and applications for
 three-dimensional optical memory devices)

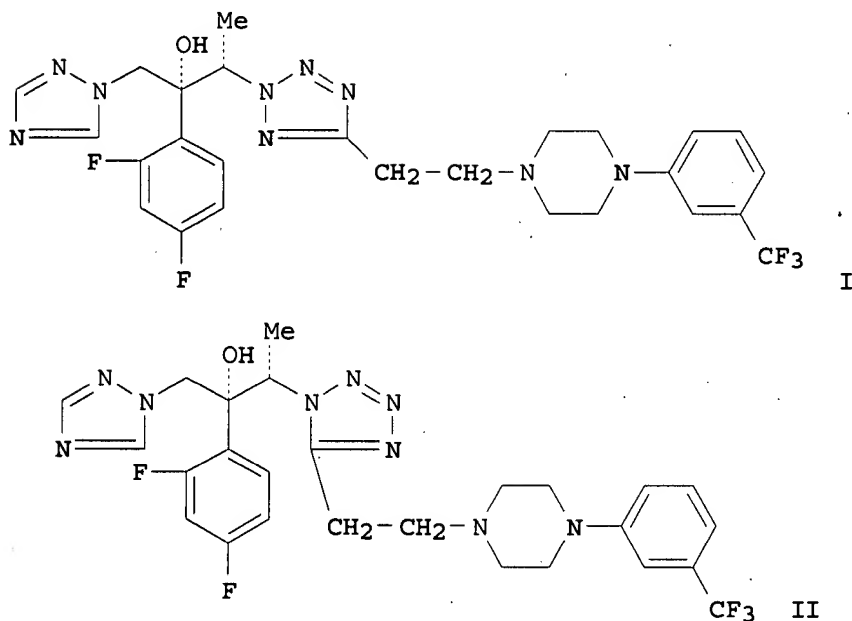
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L72 ANSWER 4 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

MHuang REM4B31 571-272-3952

07/16/2007

ACCESSION NUMBER: 2004:306990 HCAPLUS
 DOCUMENT NUMBER: 141:203098
 TITLE: Optically active antifungal azoles: synthesis and antifungal activity of (2R,3S)-2-(2,4-difluorophenyl)-3-(5-{2-[4-aryl-piperazin-1-yl]-ethyl}-tetrazol-2-yl/1-yl)-1-[1,2,4]-triazol-1-yl-butan-2-ol
 AUTHOR(S): Upadhayaya, Ram Shankar; Sinha, Neelima; Jain, Sanjay; Kishore, Nawal; Chandra, Ramesh; Arora, Sudershan K.
 CORPORATE SOURCE: New Chemical Entity Research, Medicinal Chemistry Division, Pune, 411042, India
 SOURCE: Bioorganic & Medicinal Chemistry (2004), 12(9), 2225-2238
 CODEN: BMECEP; ISSN: 0968-0896
 PUBLISHER: Elsevier Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 141:203098
 GI



AB Series of (2R,3S)-2-(2,4-difluorophenyl)-3-(5-{2-[4-aryl-piperazin-1-yl]-ethyl}-tetrazol-2-yl)-1-[1,2,4]-triazol-1-yl-butan-2-ol and (2R,3S)-2-(2,4-difluorophenyl)-3-(5-{2-[4-aryl-piperazin-1-yl]-ethyl}-tetrazole-1-yl)-1-[1,2,4]-triazol-1-yl-butan-2-ol derivs. were synthesized. Their antifungal activity was evaluated by in vitro agar diffusion and broth dilution assay. Compound I and its positional isomer II, having 3-trifluoromethyl substitution on the Ph ring of piperazine, demonstrated significant antifungal activity against a variety of fungal cultures (*Candida* spp., *Cryptococcus neoformans*, and *Aspergillus* spp.). II showed MIC value of 0.12 µg/mL for *C. albicans*, *C. albicans* V-01-191A-261 (resistant

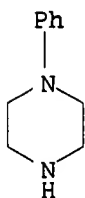
strain), 0.25 µg/mL for *C. tropicalis*, *C. parapsilosis* ATCC 22019, and *C. krusei*, and MIC value of 0.5 µg/mL for *C. glabrata* and *C. krusei* ATCC 6258, which is comparable to itraconazole and better than fluconazole. I showed significant activity (MIC 0.25-0.5 µg/mL) against *Candida* spp. and strong anticryptococcal activity (MIC 0.25 µg/mL) against *C. neoformans*.

IT 92-54-6

RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis and antifungal activity of optically active azoles)

RN 92-54-6 HCAPLUS

CN Piperazine, 1-phenyl- (CA INDEX NAME)



CC 10-5 (Microbial, Algal, and Fungal Biochemistry)

IT 92-54-6 107-13-1, Acrylonitrile, reactions 110-91-8,
Morpholine, reactions 288-88-0, 1H-1,2,4-Triazole 348-57-2
687-47-8, Ethyl (S)-lactate 841-77-0 1013-78-1 2252-63-3
2759-28-6 6269-89-2 6640-24-0 15532-75-9 26628-22-8, Sodium
azide 34803-66-2 35386-24-4 38212-30-5 38212-33-8
39512-50-0 106476-37-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis and antifungal activity of optically active azoles)

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L72 ANSWER 5 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:148708 HCAPLUS

DOCUMENT NUMBER: 140:347025

TITLE: Amplified spontaneous emission under optical
pumping from an organic semiconductor laser
structure equipped with transparent carrier
injection electrodes

AUTHOR(S): Yamamoto, Hidetoshi; Oyamada, Takahito; Sasabe,
Hiroyuki; Adachi, Chihaya

CORPORATE SOURCE: Department of Photonics Materials Science,
Chitose Institute of Science and Technology
(CIST), 758-65 Bibi, Chitose, Hokkaido,
066-8655, Japan

SOURCE: Applied Physics Letters (2004), 84(8), 1401-1403
CODEN: APPLAB; ISSN: 0003-6951

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We succeeded in observing amplified spontaneous emissions (ASEs)
from an organic semiconductor laser structure equipped with transparent
carrier injection electrodes under optical pumping. We employed a
transparent indium-tin-oxide (ITO) anode and cathode, which
significantly minimized light propagation loss compared with that in

conventional metal electrodes. In particular, we incorporated an ultrathin MgAg layer between the organic electron transport layer and ITO cathode to enhance electron injection efficiency, while maintaining low light propagation loss, and also to protect the organic layer from plasma damage when forming the ITO. By optically pumping the ITO [30 nm]/4,4'-bis[N(1-naphthyl)-N-phenyl-amino]biphenyl (α -NPD) [20 nm]/4,4'-di(N-carbazolyl)biphenyl (CBP) doped with 1,4-dimethoxy-2,5-bis[p-{N-phenyl-N(m-tolyl)amino}styryl]benzene (BSB) [70 nm]/2,9-dimethyl-4,7-diphenyl-1,10-phenanthroline (BCP) [20 nm]/tris-(8-hydroxy-quinoline)aluminum (Alq3) [20 nm]/MgAg [2.5 nm]/ITO [20 nm] device, a low ASE threshold of $E_{th}=5.1\pm1.0$ $\mu\text{J}/\text{cm}^2$ with a full width at half maximum of 11 nm was obtained under optical excitation. We also evaluated elec. pumping with this device. Although we observed high efficiency electroluminescence at an external quantum efficiency (η_{ext}) of 3.6% at a low c.d. of $J=0.1$ mA/cm^2 , a rapid decrease in η_{ext} was observed with an increase in c.d., suggesting the presence of large exciton-polaron annihilation.

IT 352437-85-5

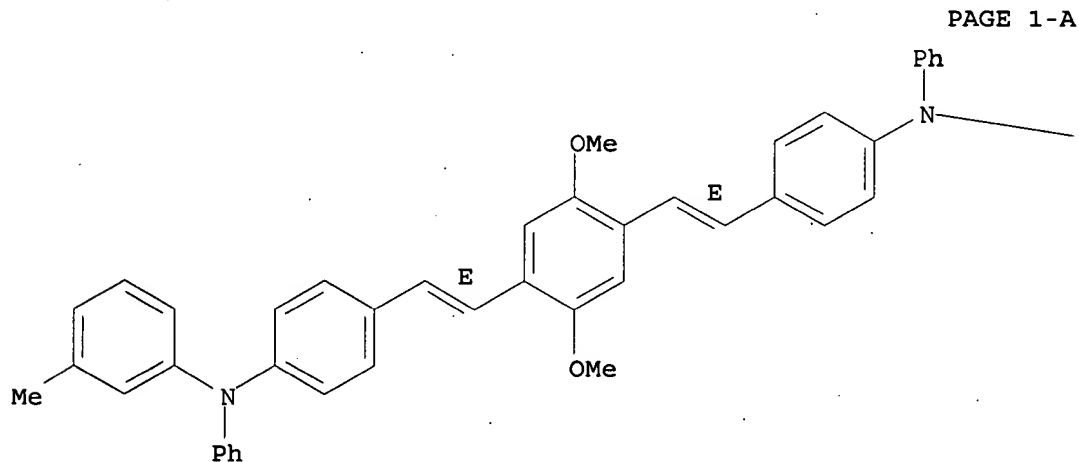
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)

(CBP doped with; amplified spontaneous emission under optical pumping from organic semiconductor laser structure equipped with transparent carrier injection electrodes)

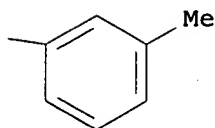
RN 352437-85-5 HCAPLUS

CN Benzenamine, 4,4'-[(2,5-dimethoxy-1,4-phenylene)di-(1E)-2,1-ethenediyl]bis[N-(3-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



PAGE 1-B



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)

Section cross-reference(s): 22, 76

IT 352437-85-5

RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)

(CBP doped with; amplified spontaneous emission under optical pumping from organic semiconductor laser structure equipped with transparent carrier injection electrodes)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:984195 HCAPLUS

DOCUMENT NUMBER: 140:287123

TITLE: Synthesis and nonlinear optical properties of new p-substituted stilbenes

AUTHOR(S): Yan, Yun-Xing; Tao, Xu-Tang; Yang, Jia-Xiang; Wang, Dong; Yu, Xiao-Qiang; Zhao, Xian; Jiang, Min-Hua

CORPORATE SOURCE: State Key Laboratory of Crystal Materials, Shandong University, Jinan, 250100, Peop. Rep. China

SOURCE: Huaxue Xuebao (2003), 61(11), 1809-1812

CODEN: HHHPA4; ISSN: 0567-7351

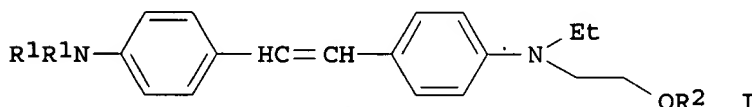
PUBLISHER: Kexue Chubanshe

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

OTHER SOURCE(S): CASREACT 140:287123

GI



AB Title compound I (R1 = Me, Et; R2 = H, 4-nitrobenzoyl) were synthesized and characterized by 1H NMR, IR and elemental anal. Linear absorption, single-photon induced fluorescence and two-photon induced fluorescence were investigated. When pumped with 800 nm laser irradiation, I (R1 = Me, Et; R2 = H) showed strong two-photon induced blue fluorescence at 436 and 440 nm resp., while I (R1 = Me, Et; R2 = 4-nitrobenzoyl) exhibited no fluorescence.

IT 352434-82-3P

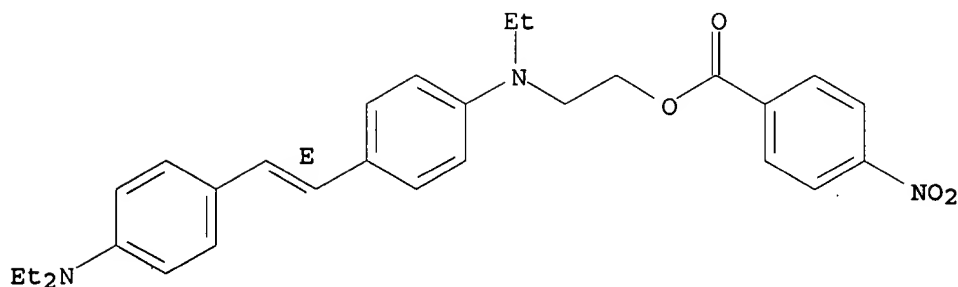
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(synthesis and nonlinear optical properties of substituted stilbenes)

RN 352434-82-3 HCAPLUS

CN Ethanol, 2-[[4-[(1E)-2-[4-(diethylamino)phenyl]ethenyl]phenyl]ethylamino]-, 4-nitrobenzoate (ester) (9CI) (CA INDEX NAME)

Double bond geometry as shown.



CC 25-6 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 22

IT 223425-53-4P 352434-82-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)
(synthesis and nonlinear optical properties of
substituted stilbenes)

L72 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:779713 HCAPLUS

DOCUMENT NUMBER: 140:110964

TITLE: Optical and electrochemical properties of
soluble donor- π -donor compounds as potential
molecular wires and electrochemically-triggered
optical switches

AUTHOR(S): Porres, Laurent; Alain, Valerie; Thouin,
Laurent; Hapiot, Philippe; Blanchard-Desce,
Mireille

CORPORATE SOURCE: Synthèse et Electrosynthèse Organiques (CNRS,
UMR 6510), Institut de Chimie, Université de
Rennes 1, Rennes, F-35042, Fr.

SOURCE: Physical Chemistry Chemical Physics (2003),
5(20), 4576-4582

CODEN: PPCPFQ; ISSN: 1463-9076

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 140:110964

AB With the aim of designing mol. wires operating at easily accessible potentials, a series of soluble bis-donor polyenic compds. (up to 3.2 nm long) has been prepared. Their optical and electrochem. properties have been investigated. These model compds. were shown to exhibit a reversible two-electron oxidation process at low potential (which further decreases with increasing polyenic chain length). The oxidized dicationic species combine convenient stability and solubility. Interestingly, these species also show reduced bond length alternation along the polyenic chain, consistent with a significant red-shift of their absorption band to the NIR region. Such behavior is expected to lead to a dramatic enhancement of the third-order nonlinear optical responses of the polyenic mols. upon oxidation, opening the way to optical switches. Hence, such mols. represent promising model compds. for mol. wires but also open an innovative route towards voltage-driven optical switches.

IT 196107-51-4P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or

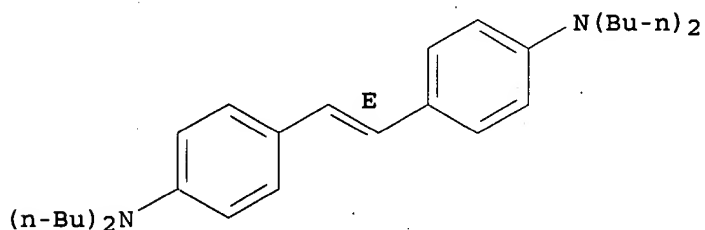
reagent)

(target donor- π -donor; preparation and optical and electrochem. properties of soluble donor- π -donor compds. comprising polyene chains terminating in 4-(dibutylamino)phenyl groups)

RN 196107-51-4 HCAPLUS

CN Benzenamine, 4,4'-(1E)-1,2-ethenediylbis[N,N-dibutyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



CC 22-9 (Physical Organic Chemistry)

Section cross-reference(s): 72, 73, 76

IT 196107-51-4P 647376-77-0P 647376-78-1P 647376-81-6P

647376-82-7P 647376-83-8P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)

(target donor- π -donor; preparation and optical and electrochem. properties of soluble donor- π -donor compds. comprising polyene chains terminating in 4-(dibutylamino)phenyl groups)

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 8 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:648277 HCAPLUS

DOCUMENT NUMBER: 139:180507

TITLE: Two-photon or higher-order absorbing optical materials for generation of reactive species for polymerization

INVENTOR(S): Cumpston, Brian; Lipson, Matthew; Marder, Seth R.; Perry, Joseph W.

PATENT ASSIGNEE(S): California Institute of Technology, USA

SOURCE: U.S., 31 pp., Cont.-in-part of U.S. Ser. No. 965,945.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

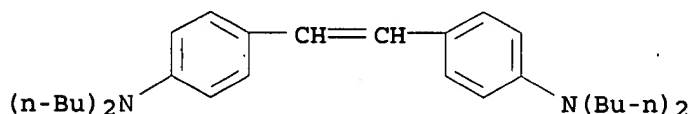
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 6608228	B1	20030819	US 1999-292652	19990415

US 6267913	B1	20010731	US 1997-965945	199711 07
WO 9953242	A1	19991021	WO 1999-US8383	199904 16
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9936488	A	19991101	AU 1999-36488	199904 16
EP 1071909	A1	20010131	EP 1999-918616	199904 16
R: DE, FR, GB, NL				
US 2004110984	A1	20040610	US 2003-442431	200305 20
US 7235194	B2	20070626	US 1997-965945	A2 199711 07
PRIORITY APPLN. INFO.:				
			US 1998-82128P	P 199804 16
			US 1996-29437P	P 199611 12
			US 1996-29443P	P 199611 12
			US 1996-30141P	P 199611 12
			US 1999-292652	A 199904 15
			WO 1999-US8383	W 199904 16

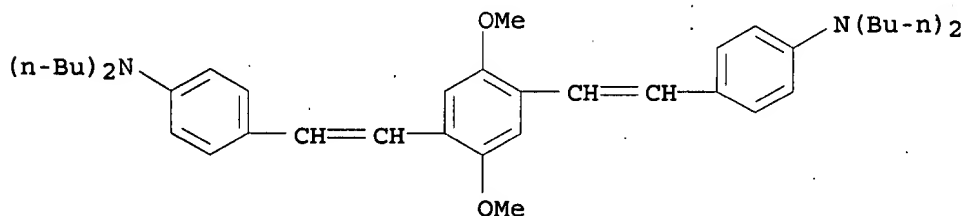
AB Disclosed are chromophores and methods of their use. The compds. generally include a bridge of π -conjugated bonds connecting electron donating groups or electron accepting groups. The bridge may be substituted with a variety of substituents as well. Solubility, lipophilicity, absorption maxima and other characteristics of the compds. may be tailored by changing the electron donating groups or electron accepting groups, the substituents attached to or the

length of the π -conjugated bridge. Numerous photophys. and photochem. methods are enabled by converting these compds. to electronically excited states upon simultaneous absorption of at least two photons of radiation. The compds. have large two-photon or higher-order absorptivities such that upon absorption, one or more Lewis acidic species, Lewis basic species, radical species or ionic species are formed. Microfabrication was performed by polymerization of Sartomer SR9008 and Sartomer SR368 using 1,4-bis(bis(dibutylamino)styryl) 2,5-dimethoxybenzene.

IT 202063-32-9 208263-41-6, 1,4-Bis(bis(dibutylamino)styryl) 2,5-dimethoxybenzene
 RL: CAT (Catalyst use); USES (Uses)
 (two-photon or higher-order absorbing optical materials for generation of reactive species for polymerization)
 RN 202063-32-9 HCAPLUS
 CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-dibutyl- (9CI) (CA INDEX NAME)



RN 208263-41-6 HCAPLUS
 CN Benzenamine, 4,4'-[(2,5-dimethoxy-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-dibutyl- (CA INDEX NAME)



IC ICM C07C211-06
 ICS C07D403-04; G02F001-361
 INCL 564308000; 252301170; 252301210; 252301220; 252582000; 252583000;
 252600000; 430072000; 430073000; 544296000
 CC 35-3 (Chemistry of Synthetic High Polymers)
 IT 202063-32-9 208263-41-6, 1,4-Bis(bis(dibutylamino)styryl) 2,5-dimethoxybenzene
 RL: CAT (Catalyst use); USES (Uses)
 (two-photon or higher-order absorbing optical materials for generation of reactive species for polymerization)
 REFERENCE COUNT: 92 THERE ARE 92 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 9 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2003:389402 HCAPLUS
 DOCUMENT NUMBER: 139:187532
 TITLE: Synthesis and nonlinear optical properties of new symmetrically substituted stilbenes
 AUTHOR(S): Yan, Yunxing

CORPORATE SOURCE: Institute of Crystal Materials, State Key Laboratory of Crystal Materials, Shandong University, Jinan, 250100, Peop. Rep. China

SOURCE: Journal of Solid State Chemistry (2003), 172(2), 364-369
CODEN: JSSCBI; ISSN: 0022-4596

PUBLISHER: Elsevier Science

DOCUMENT TYPE: Journal

LANGUAGE: English

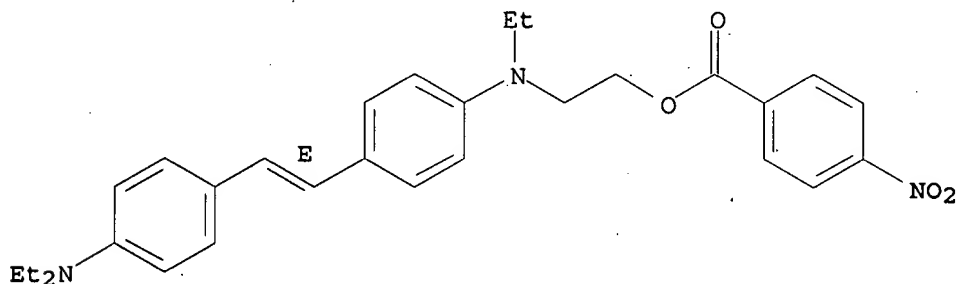
AB Three new chromophores and trans-4-(N-(Et 4''-nitrobenzoate)-N-Et amino)-4'-(di-Me amino) stilbene (DMANHAS) have been synthesized and whose chemical structures have been characterized by ¹H NMR, IR, and elemental analyses. Linear absorption, single-photon-induced fluorescence and two-photon-induced fluorescence are exptl. studied. Trans-4-(N-2-hydroxyethyl-N-Et amino)-4'-(di-Me amino)stilbene (DMAHAS) and trans-4-(N-2-hydroxyethyl-N-Et amino)-4'-(di-Et amino)stilbene (DEAHAS) have effective two-photon absorption cross-sections of $\sigma_2=0.91+10^{-46}$ cm⁴ s/photon and $\sigma_2=1.19+10^{-46}$ cm⁴ s/photon at 532 nm by using an open aperture Z-scan technique, resp. When pumped with 800 nm laser irradiation, DMAHAS and DEAHAS indicate strong two-photon-induced blue fluorescence of 436 and 440 nm, resp., while trans-4-(N-(Et 4''-nitrobenzoate)-N-Et amino)-4'-(di-Et amino) stilbene (DEANHAS) and DMANHAS exhibit no fluorescence.

IT 352434-82-3P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(synthesis, linear and nonlinear optical absorption and fluorescence of new sym. substituted stilbenes)

RN 352434-82-3 HCAPLUS

CN Ethanol, 2-[[4-[(1E)-2-[4-(diethylamino)phenyl]ethenyl]phenyl]ethylamino]-, 4-nitrobenzoate (ester) (9CI) (CA INDEX NAME)

Double bond geometry as shown.

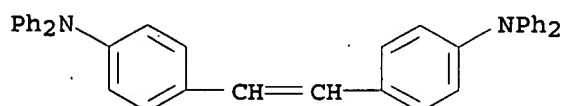


CC 73-4 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 25

IT 223425-53-4P 352434-82-3P 579492-34-5P 579492-35-6P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(synthesis, linear and nonlinear optical absorption and fluorescence of new sym. substituted stilbenes)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:323650 HCAPLUS
DOCUMENT NUMBER: 139:187829
TITLE: Gain-narrowing characteristics of fluorescent organic molecules with symmetrical or asymmetrical structures in a neat thin-film optical waveguide
AUTHOR(S): Ichikawa, Musubu; Tachi, Tamami; Satsuki, Makoto; Suga, Sadaharu; Koyama, Toshiki; Taniguchi, Yoshio
CORPORATE SOURCE: Faculty of Textile Science and Technology, Department of Functional Polymer Science, Shinshu University, Ueda, 386-8567, Japan
SOURCE: Journal of Photochemistry and Photobiology, A: Chemistry (2003), 158(2-3), 219-221
CODEN: JPPCEJ; ISSN: 1010-6030
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors investigated gain-narrowing performance of fluorescent styrylbenzene and azomethyne derivs. in a neat thin-film optical waveguide by optical pumping. In particular, an extremely low-threshold for gain-narrowing was obtained with 4,4'-bis[4-(di-p-tolyl-amino)styryl]biphenyl (LD1), and the obtained threshold was comparable to the threshold of LD1 in the high efficient guest-host system previously reported. High symmetry of the mol. structure was important for the gain-narrowing performance.
IT 116942-09-7
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process) (gain-narrowing performance of fluorescent styrylbenzene- and azomethyne derivs. in thin-film optical waveguide studied by optical pumping)
RN 116942-09-7 HCAPLUS
CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-diphenyl- (CA INDEX NAME)



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
IT 55035-42-2 89114-91-0 105276-36-6 116942-09-7
119586-44-6, 4,4'-Bis[4-(di-p-tolyl-amino)styryl]biphenyl
581805-75-6
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process) (gain-narrowing performance of fluorescent styrylbenzene- and azomethyne derivs. in thin-film optical waveguide studied by optical pumping)
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 11 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:564276 HCAPLUS

DOCUMENT NUMBER: 135:159970
 TITLE: Optical sensor
 INVENTOR(S): Okazaki, Masaki
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 25 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001210857	A	20010803	JP 2000-20677	20000128
PRIORITY APPLN. INFO.:				20000128

AB The invention refers to an optical sensor comprising a spectral sensitizer which can detect fluorescence in the 700 - 900 nm range from a two photon pigment without being affected by the exciting radiation.

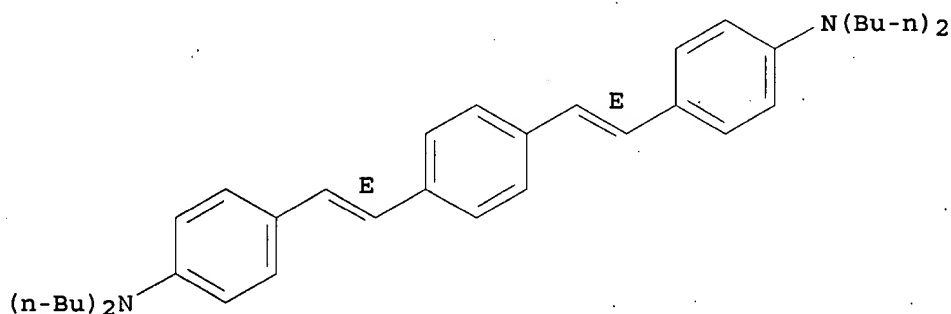
IT 223425-59-0

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (optical sensor)

RN 223425-59-0 HCAPLUS

CN Benzenamine, 4,4'-[1,4-phenylenedi-(1E)-2,1-ethenediyl]bis[N,N-dibutyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IC ICM H01L031-10

ICS C09B023-00; G01J001-50; G01J003-02; H01L031-02

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 223425-59-0 223425-61-4 223425-64-7

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (optical sensor)

L72 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:559968 HCAPLUS

DOCUMENT NUMBER: 135:159952

TITLE: Two-photon or higher-order absorbing optical materials and methods of use
 INVENTOR(S): Marder, Seth; Perry, Joseph
 PATENT ASSIGNEE(S): California Institute of Technology, USA
 SOURCE: U.S., 71 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 3
 PATENT INFORMATION:

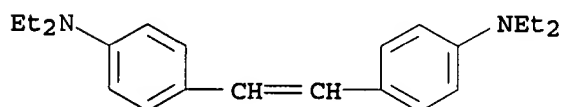
PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
US 6267913	B1	20010731	US 1997-965945	199711 07
US 6608228	B1	20030819	US 1999-292652	199904 15
US 2002185634	A1	20021212	US 2001-918874	200107 30
US 2004110984	A1	20040610	US 2003-442431	200305 20
US 7235194	B2	20070626	US 1996-29437P	P 199611 12
			US 1996-29443P	P 199611 12
			US 1996-30141P	P 199611 12
			US 1997-965945	A2 199711 07
			US 1998-82128P	P 199804 16
			US 1999-292652	A3 199904 15

PRIORITY APPLN. INFO.:

AB Comps. capable of simultaneous two-photon absorption are disclosed. Preferably, the comps. contain compds. satisfying the formulas D- Π -D, A- Π -A, D-A-D and A-D-A, wherein D is an electron donor group, A is an electron acceptor group and Π comprises a bridge of π -conjugated bonds connecting the electron donor groups and electron acceptor groups. In A-D-A and D-A-D compds., the π bridge may be substituted with electron donor groups and electron acceptor groups, resp. Methods for generating an electronically excited state of a compound, including those satisfying one of these

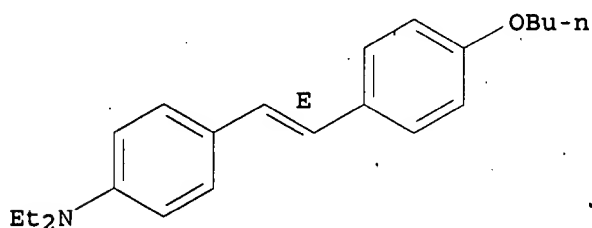
formulas are also described. The electronically excited state is achieved in a method that includes irradiating the compound with light. Then, the compound is converted to a multi-photon electronically excited state upon simultaneous absorption of at least two photons of light. The sum of the energies of all of the absorbed photons is greater than or equal to the transition energy from a ground state of the compound to the multi-photon excited state. The energy of each absorbed photon is less than the transition energy between the ground state and the lowest single-photon excited state of the compound is less than the transition energy between the multi-photon excited state and the ground state. Application as photoinitiators for polymerization and in optical limiters is indicated.

IT 72057-75-1 179677-50-0 180967-93-5
 196107-51-4 208263-37-0 208263-38-1
 208263-39-2 208263-40-5 352010-74-3
 352010-75-4 352010-76-5 352010-77-6
 352436-32-9 352436-56-7 352438-13-2
 RL: PRP (Properties)
 (two-photon absorbing optical materials and their use)
 RN 72057-75-1 HCAPLUS
 CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-diethyl- (CA INDEX NAME)



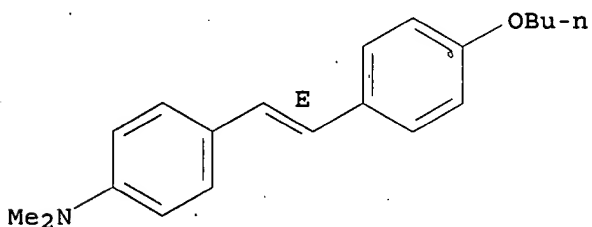
RN 179677-50-0 HCAPLUS
 CN Benzenamine, 4-[(1E)-2-(4-butoxyphenyl)ethenyl]-N,N-diethyl- (9CI)
 (CA INDEX NAME)

Double bond geometry as shown.



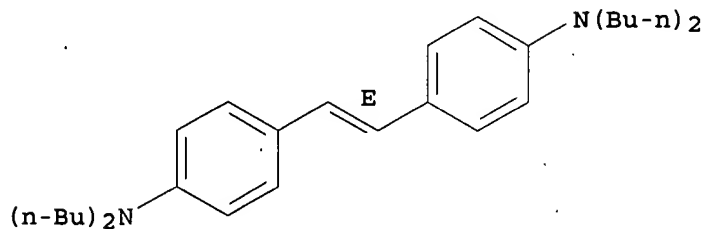
RN 180967-93-5 HCAPLUS
 CN Benzenamine, 4-[(1E)-2-(4-butoxyphenyl)ethenyl]-N,N-dimethyl- (9CI)
 (CA INDEX NAME)

Double bond geometry as shown.

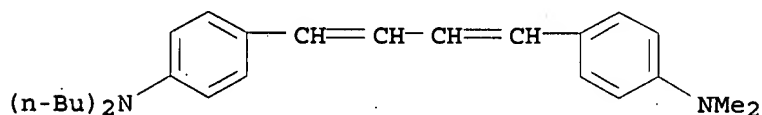


RN 196107-51-4 HCAPLUS
CN Benzenamine, 4,4'-(1E)-1,2-ethenediylbis[N,N-dibutyl- (9CI) (CA INDEX NAME)

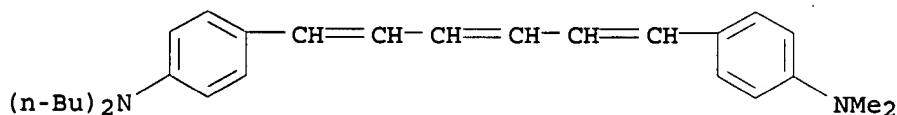
Double bond geometry as shown.



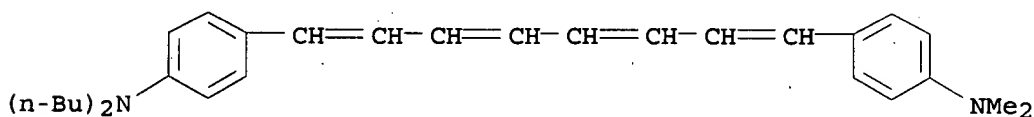
RN 208263-37-0 HCAPLUS
CN Benzenamine, 4-[4-[4-(dibutylamino)phenyl]-1,3-butadienyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 208263-38-1 HCAPLUS
CN Benzenamine, 4-[6-[4-(dibutylamino)phenyl]-1,3,5-hexatrienyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)

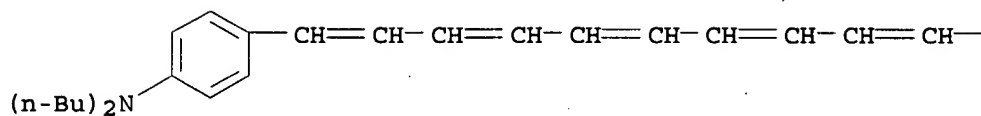


RN 208263-39-2 HCAPLUS
CN Benzenamine, 4-[8-[4-(dibutylamino)phenyl]-1,3,5,7-octatetraenyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)

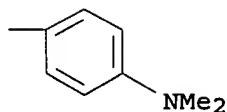


RN 208263-40-5 HCAPLUS
CN Benzenamine, 4-[10-[4-(dibutylamino)phenyl]-1,3,5,7,9-decapentaenyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)

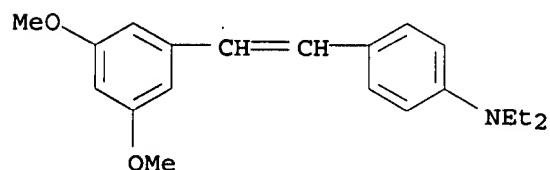
PAGE 1-A



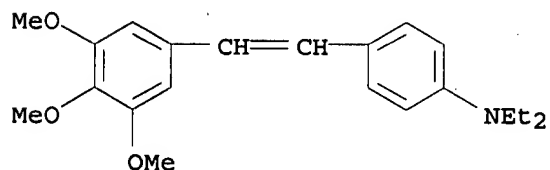
PAGE 1-B



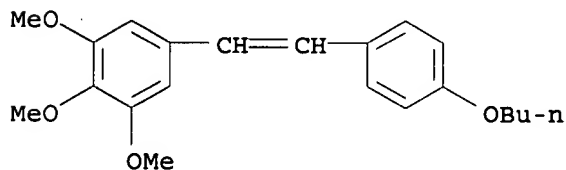
RN 352010-74-3 HCAPLUS
 CN Benzenamine, 4-[2-(3,5-dimethoxyphenyl)ethenyl]-N,N-diethyl- (9CI)
 (CA INDEX NAME)



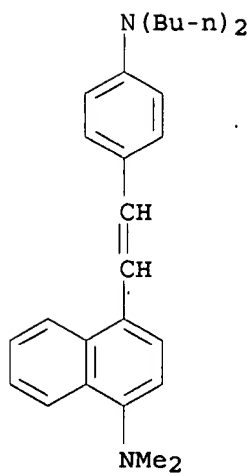
RN 352010-75-4 HCAPLUS
 CN Benzenamine, N,N-diethyl-4-[2-(3,4,5-trimethoxyphenyl)ethenyl]-
 (9CI) (CA INDEX NAME)



RN 352010-76-5 HCAPLUS
 CN Benzene, 5-[2-(4-butoxyphenyl)ethenyl]-1,2,3-trimethoxy- (9CI) (CA
 INDEX NAME)



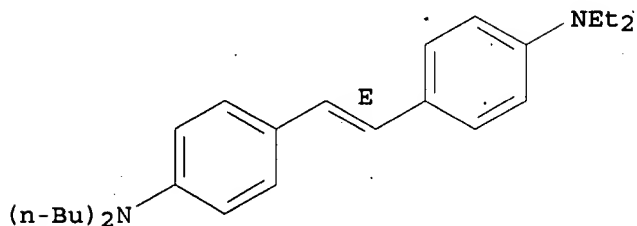
RN 352010-77-6 HCAPLUS
 CN 1-Naphthalenamamine, 4-[2-[4-(dibutylamino)phenyl]ethenyl]-N,N-
 dimethyl- (9CI) (CA INDEX NAME)



RN 352436-32-9 HCAPLUS

CN Benzenamine, 4-[(1E)-2-[4-(dibutylamino)phenyl]ethenyl]-N,N-diethyl-
(9CI) (CA INDEX NAME)

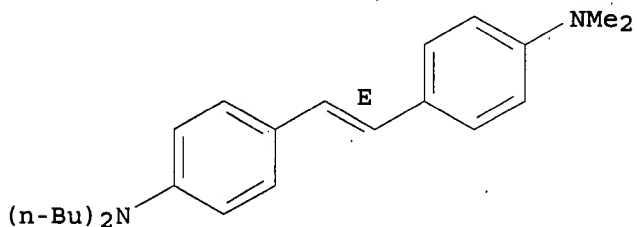
Double bond geometry as shown.



RN 352436-56-7 HCAPLUS

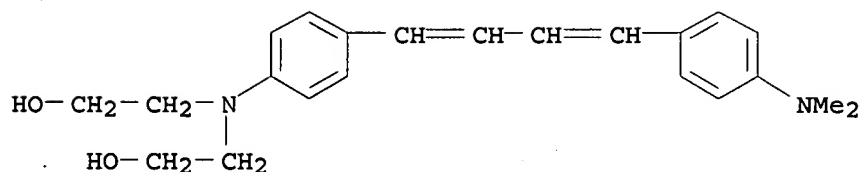
CN Benzenamine, 4-[(1E)-2-[4-(dibutylamino)phenyl]ethenyl]-N,N-dimethyl-
(9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 352438-13-2 HCAPLUS

CN Ethanol, 2,2'-[[4-[4-[4-(dimethylamino)phenyl]-1,3-butadienyl]phenyl]imino]bis- (9CI) (CA INDEX NAME)



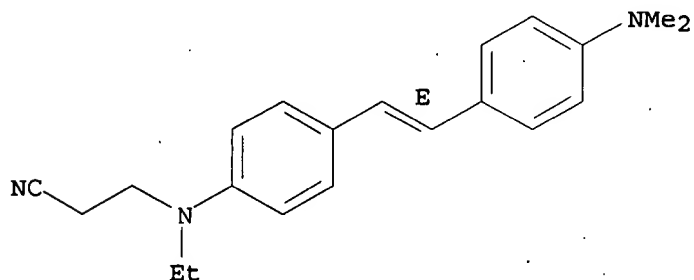
IT 352434-86-7P 352434-87-8P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);
 TEM (Technical or engineered material use); PREP (Preparation); RACT
 (Reactant or reagent); USES (Uses)
 (two-photon absorbing optical materials and their use)

RN 352434-86-7 HCAPLUS

CN Propanenitrile, 3-[[4-[(1E)-2-[4-(dimethylamino)phenyl]ethenyl]phenyl]ethy-
 lamino]- (9CI) (CA INDEX NAME)

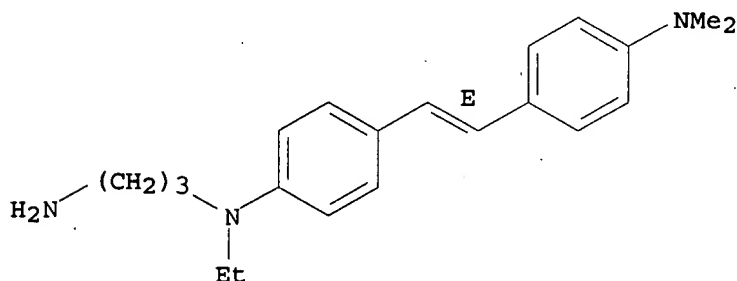
Double bond geometry as shown.



RN 352434-87-8 HCAPLUS

CN 1,3-Propanediamine, N-[4-[(1E)-2-[4-(dimethylamino)phenyl]ethenyl]ph
 enyl]-N-ethyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 34266-56-3P 62555-98-0P 109995-80-4P

116942-09-7P 208263-41-6P 223425-59-0P

304466-98-6P 304466-99-7P 304467-08-1P

349533-53-5P 352437-06-0P 352437-08-2P

352437-10-6P 352437-80-0P 352437-81-1P

352437-82-2P 352437-83-3P 352437-85-5P

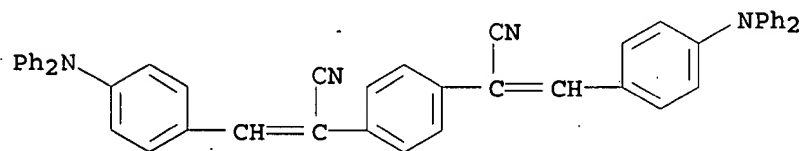
352437-94-6P 352438-01-8P 352438-03-0P

352438-04-1P 352438-18-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP
 (Preparation)

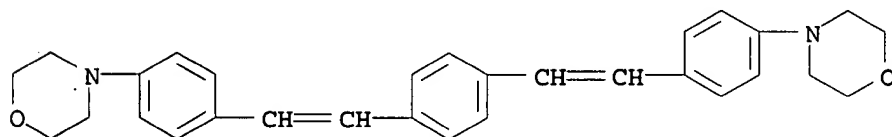
(two-photon absorbing optical materials and their use)

RN 34266-56-3 HCAPLUS

CN 1,4-Benzenediacetonitrile, α,α' -bis[[4-(diphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)

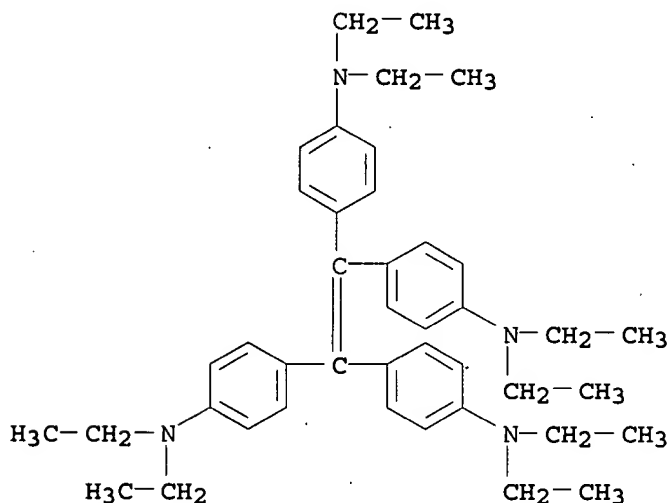
RN 62555-98-0 HCAPLUS

CN Morpholine, 4,4'-[1,4-phenylenebis(2,1-ethenediyl-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)



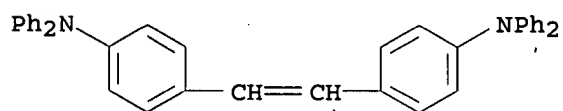
RN 109995-80-4 HCAPLUS

CN Benzenamine, 4,4',4'',4'''-(1,2-ethenediylidene)tetrakis[N,N-diethyl- (9CI) (CA INDEX NAME)

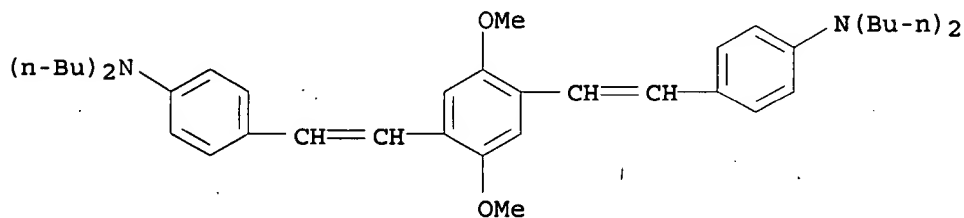


RN 116942-09-7 HCAPLUS

CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-diphenyl- (CA INDEX NAME)

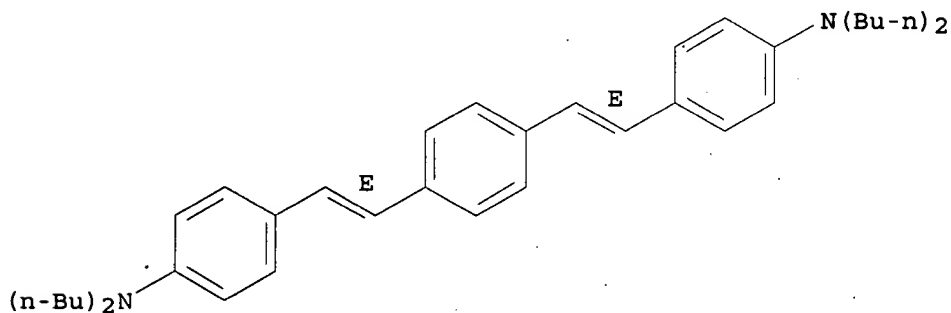


RN 208263-41-6 HCAPLUS
 CN Benzenamine, 4,4'-[(2,5-dimethoxy-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-dibutyl- (CA INDEX NAME)



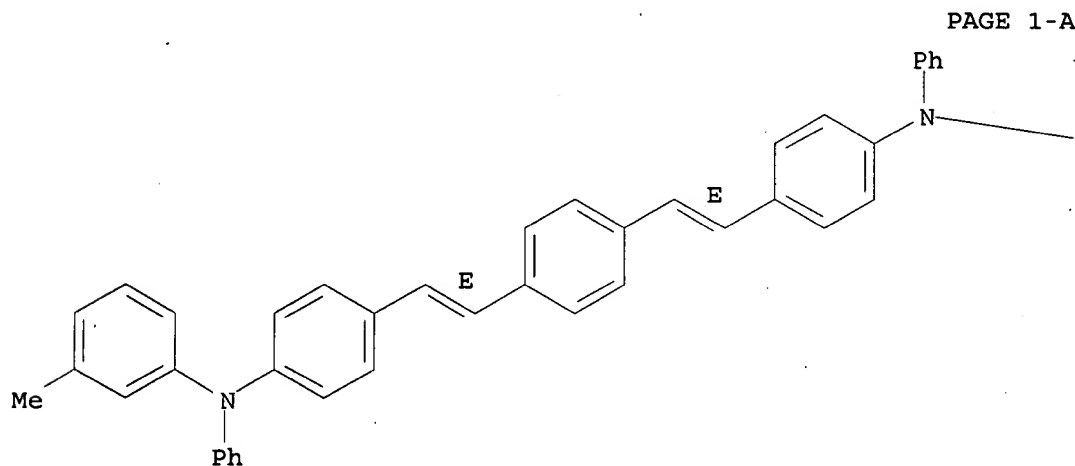
RN 223425-59-0 HCAPLUS
 CN Benzenamine, 4,4'-[1,4-phenylenedi-(1E)-2,1-ethenediyl]bis[N,N-dibutyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



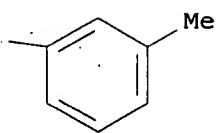
RN 304466-98-6 HCAPLUS
 CN Benzenamine, 4,4'-[(1,4-phenylenedi-(1E)-2,1-ethenediyl)bis[N-(3-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



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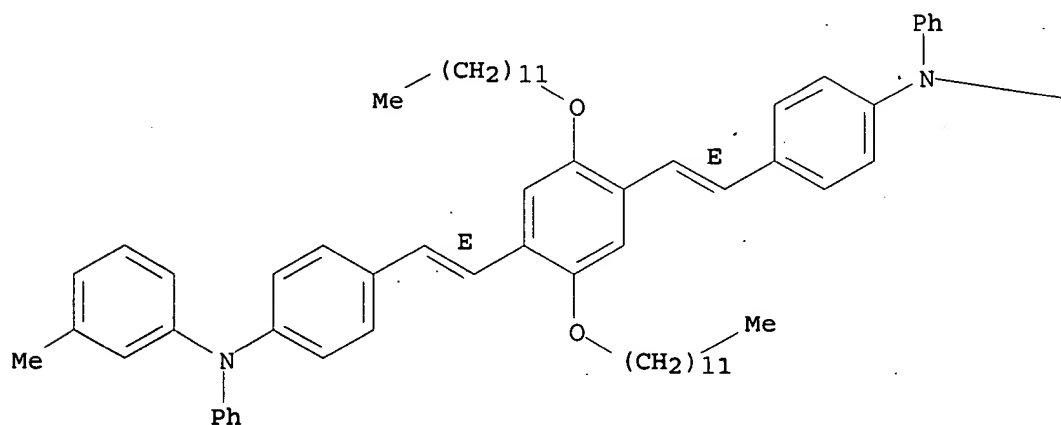
PAGE 1-B



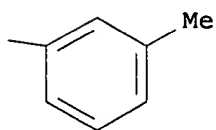
RN 304466-99-7 HCAPLUS
 CN Benzenamine, 4,4'-[[2,5-bis(dodecyloxy)-1,4-phenylene]di-(1E)-2,1-ethenediyl]bis[N-(3-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

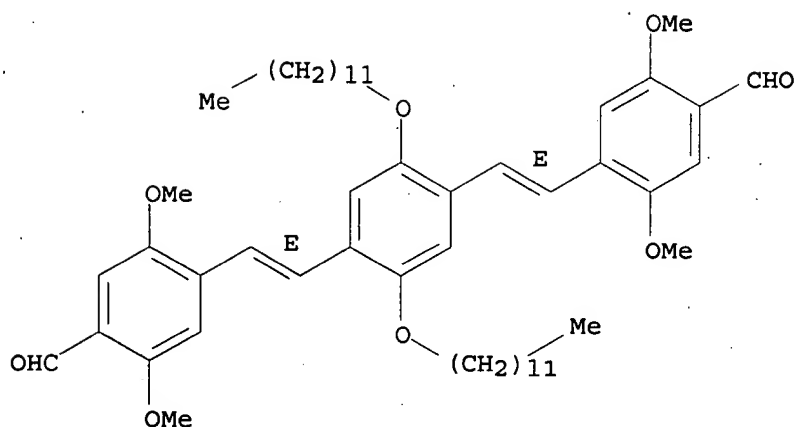


PAGE 1-B

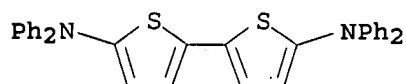


RN 304467-08-1 HCAPLUS
 CN Benzaldehyde, 4,4'-[[2,5-bis(dodecyloxy)-1,4-phenylene]di-(1E)-2,1-ethenediyl]bis[2,5-dimethoxy- (9CI) (CA INDEX NAME)

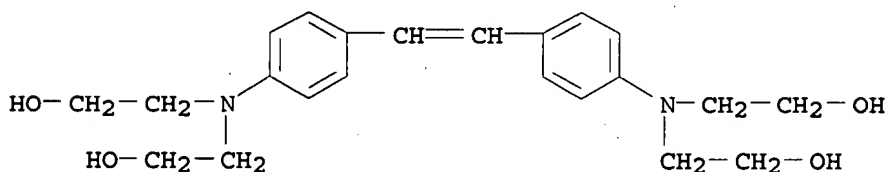
Double bond geometry as shown.



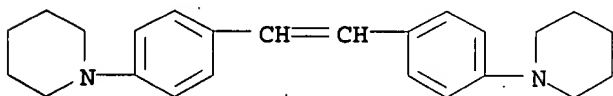
RN 349533-53-5 HCAPLUS
 CN [2,2'-Bithiophene]-5,5'-diamine, N5,N5,N5',N5'-tetraphenyl- (CA INDEX NAME)



RN 352437-06-0 HCAPLUS
 CN Ethanol, 2,2',2'',2'''-[1,2-ethenediylbis(4,1-phenylenenitrilo)]tetrakis- (9CI) (CA INDEX NAME)

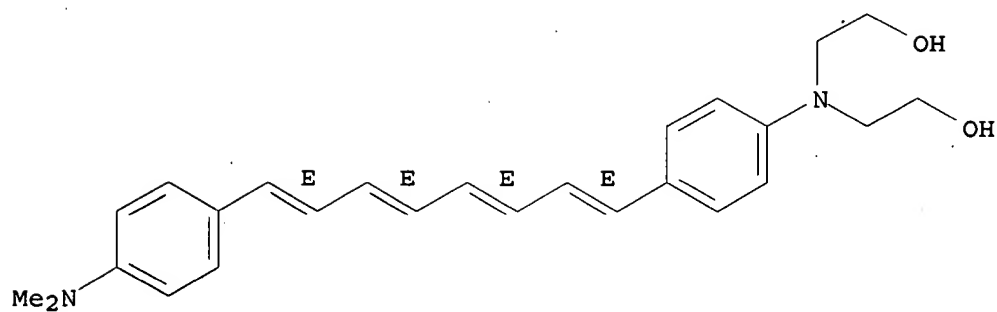


RN 352437-08-2 HCAPLUS
 CN Piperidine, 1,1'-(1,2-ethenediyl-di-4,1-phenylene)bis- (9CI) (CA INDEX NAME)



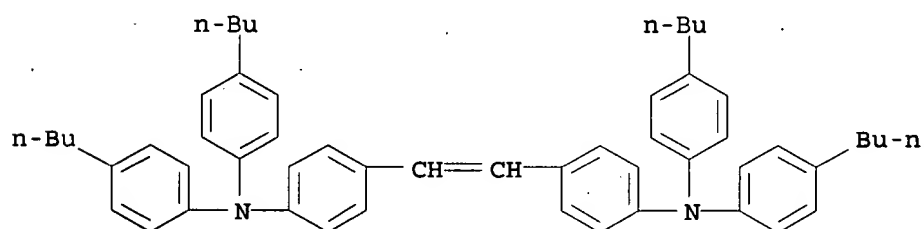
RN 352437-10-6 HCAPLUS
 CN Ethanol, 2,2'-[[4-[(1E,3E,5E,7E)-8-[4-(dimethylamino)phenyl]-1,3,5,7-octatetraenyl]phenyl]imino]bis- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



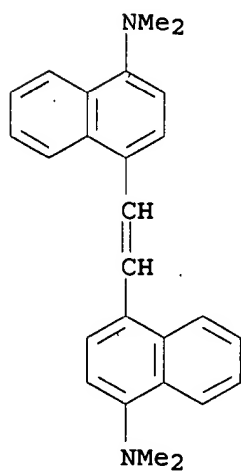
RN 352437-80-0 HCAPLUS

CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-bis(4-butylphenyl)- (9CI)
(CA INDEX NAME)



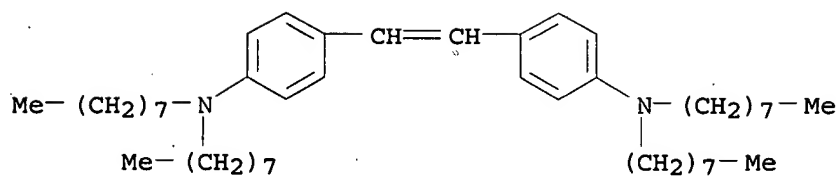
RN 352437-81-1 HCAPLUS

CN 1-Naphthalenamine, 4,4'-(1,2-ethenediyl)bis[N,N-dimethyl- (9CI) (CA
INDEX NAME)



RN 352437-82-2 HCAPLUS

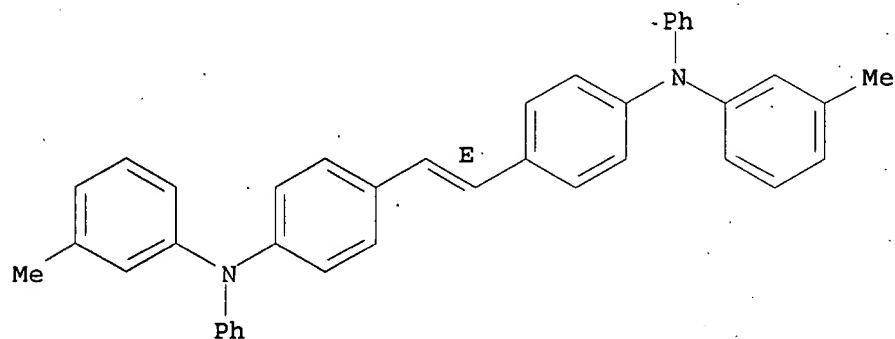
CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-dioctyl- (9CI) (CA INDEX
NAME)



RN 352437-83-3 HCAPLUS

CN Benzenamine, 4,4'-(1E)-1,2-ethenediylbis[N-(3-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

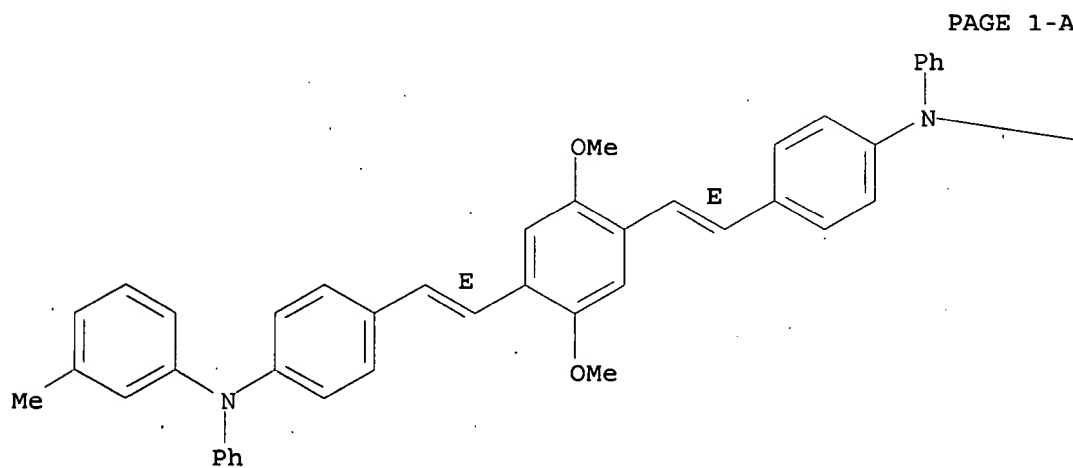
Double bond geometry as shown.



RN 352437-85-5 HCAPLUS

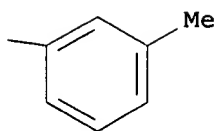
CN Benzenamine, 4,4'-[(2,5-dimethoxy-1,4-phenylene)di-(1E)-2,1-ethenediyl]bis[N-(3-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



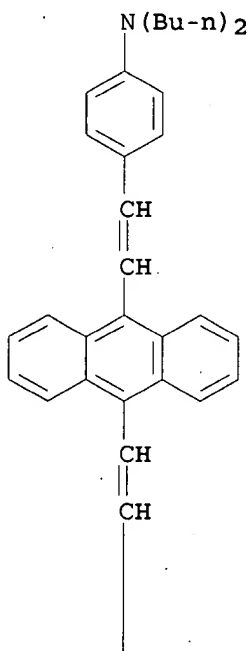
PAGE 1-A

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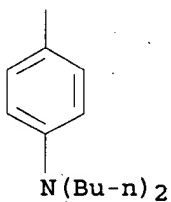


RN 352437-94-6 HCAPLUS
 CN Benzenamine, 4,4'-(9,10-anthracenediyl-di-2,1-ethenediyl)bis[N,N-dibutyl- (9CI) (CA INDEX NAME)

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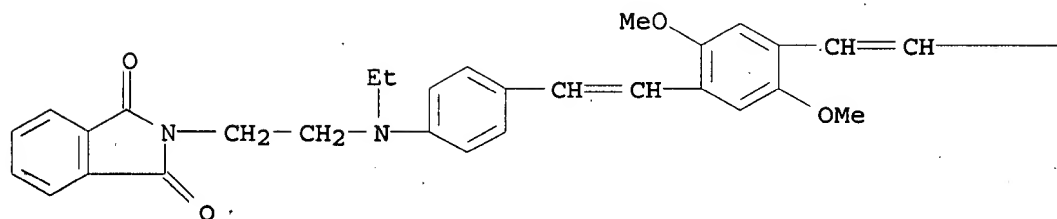


PAGE 2-A

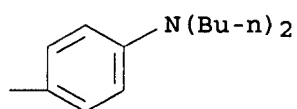


RN 352438-01-8 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 2-[2-[[4-[2-[4-[2-[4-(dibutylamino)phenyl]ethenyl]-2,5-dimethoxyphenyl]ethenyl]phenyl]ethylamino]ethyl]- (9CI) (CA INDEX NAME)

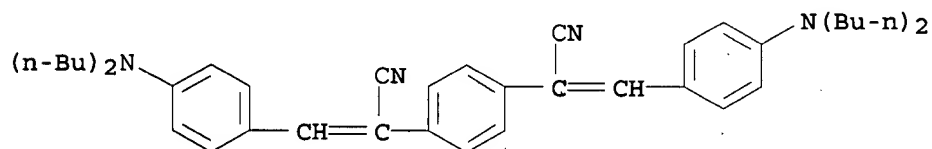
PAGE 1-A



PAGE 1-B



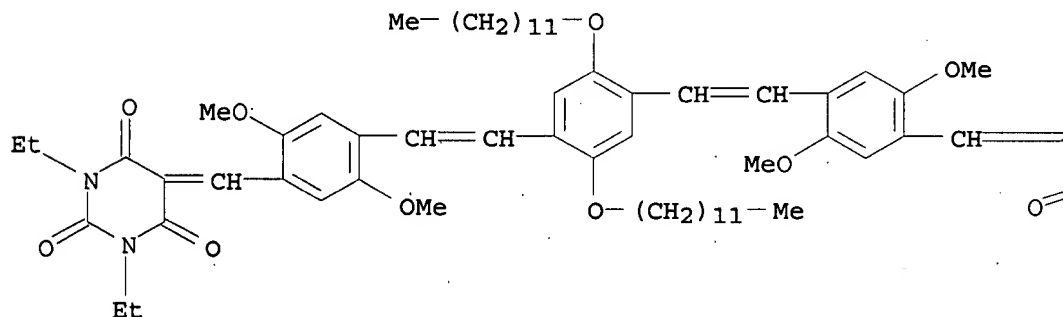
RN 352438-03-0 HCAPLUS

CN 1,4-Benzenediacetonitrile, α,α' -bis[[4-(dibutylamino)phenyl]methylene] - (9CI) (CA INDEX NAME)

RN 352438-04-1 HCAPLUS

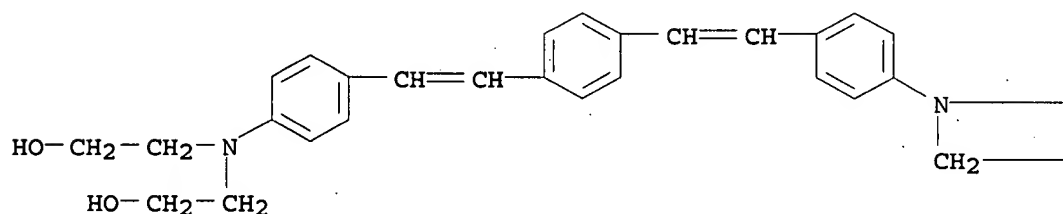
CN 2,4,6(1H,3H,5H)-Pyrimidinetrione, 5,5'-[[2,5-bis(dodecyloxy)-1,4-phenylene]bis[2,1-ethenediyl(2,5-dimethoxy-4,1-phenylene)methyldiyl]]bis[1,3-diethyl- (9CI) (CA INDEX NAME)

PAGE 1-A



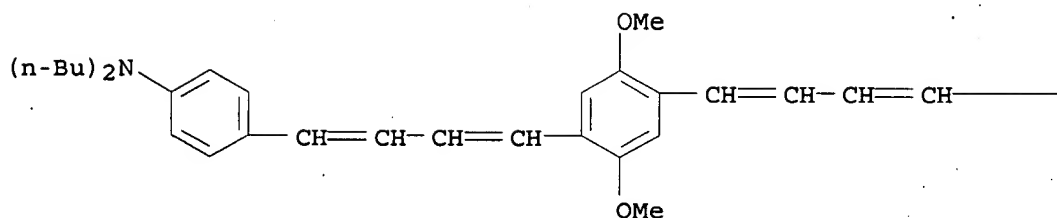
CCN1C(=O)C(=C)C(=O)N1CC

PAGE 1-A

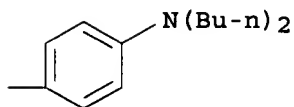

$$\text{---CH}_2\text{---OH}$$

07/16/2007

PAGE 1-A

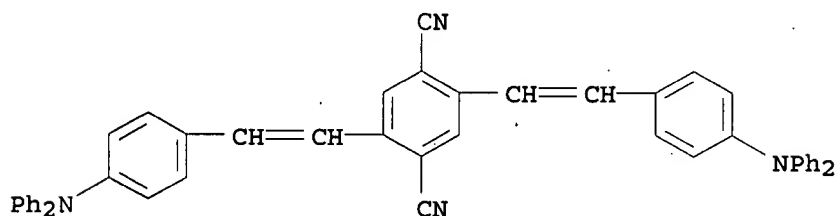


PAGE 1-B



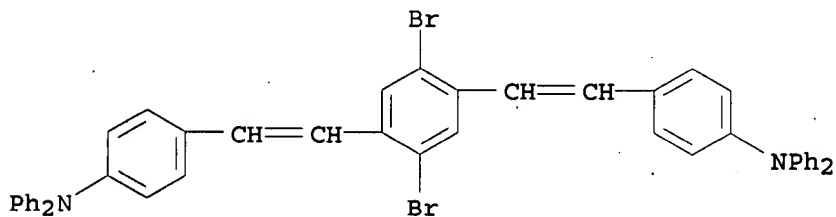
RN 208263-43-8 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 214626-73-0 HCAPLUS

CN Benzenamine, 4,4'-[(2,5-dibromo-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-diphenyl]- (9CI) (CA INDEX NAME)

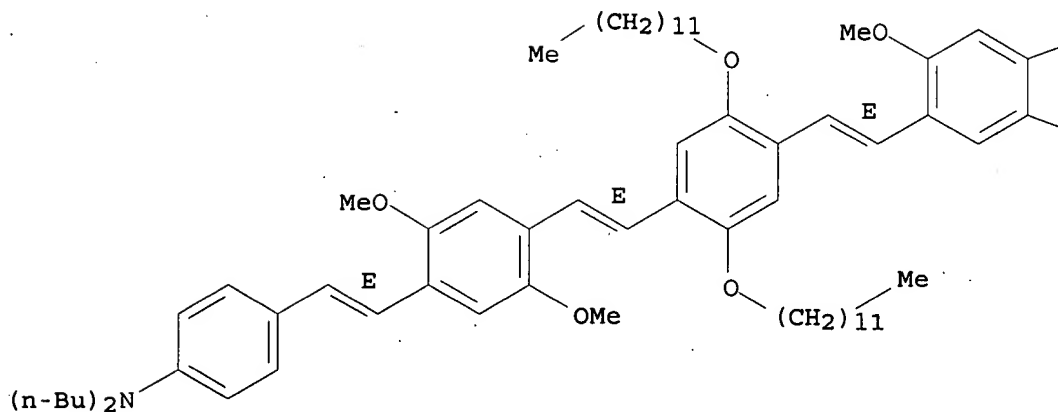


RN 304467-02-5 HCAPLUS

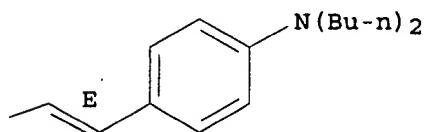
CN Benzenamine, 4,4'-[[2,5-bis(dodecyloxy)-1,4-phenylene]bis[(1E)-2,1-ethenediyl(2,5-dimethoxy-4,1-phenylene)-(1E)-2,1-ethenediyl]]bis[N,N-dibutyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

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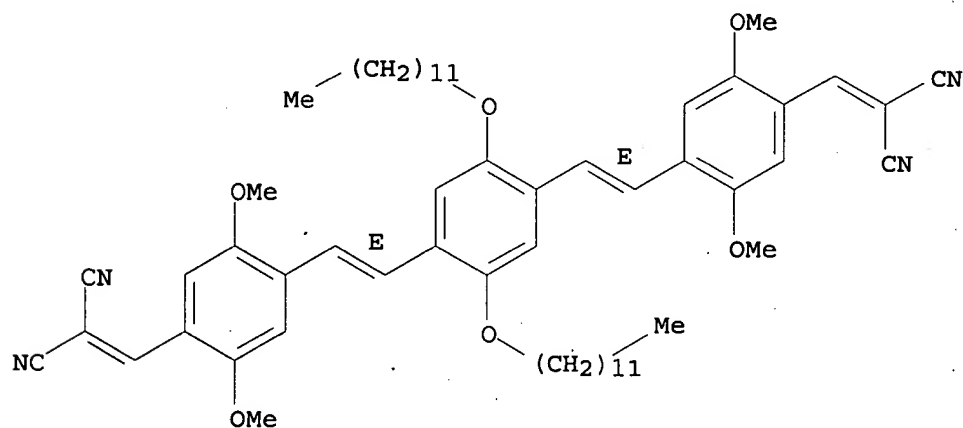
PAGE 1-B



OMe

RN 320750-93-4 HCAPLUS
 CN Propanedinitrile, 2,2'-[[2,5-bis(dodecyloxy)-1,4-phenylene]bis[(1E)-2,1-ethenediyl(2,5-dimethoxy-4,1-phenylene)methylidene]]bis- (9CI)
 (CA INDEX NAME)

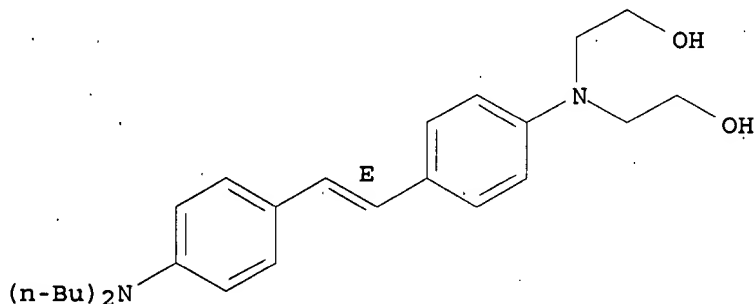
Double bond geometry as shown.



RN 352434-59-4 HCAPLUS

CN Ethanol, 2,2'-[[4-[(1E)-2-[4-(dibutylamino)phenyl]ethenyl]phenyl]imino]bis- (9CI) (CA INDEX NAME)

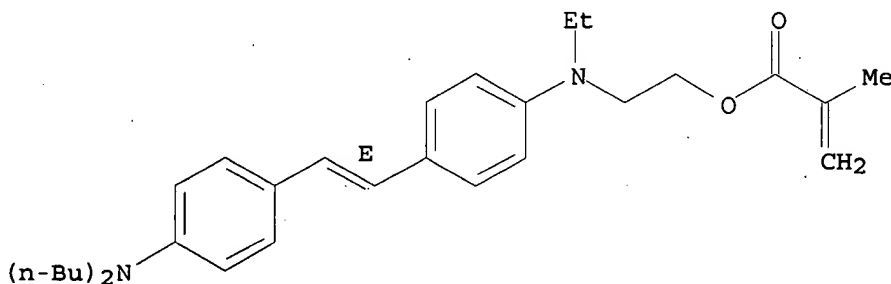
Double bond geometry as shown.



RN 352434-74-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[[4-[(1E)-2-[4-(dibutylamino)phenyl]ethenyl]phenyl]ethylamino]ethyl ester (9CI) (CA INDEX NAME)

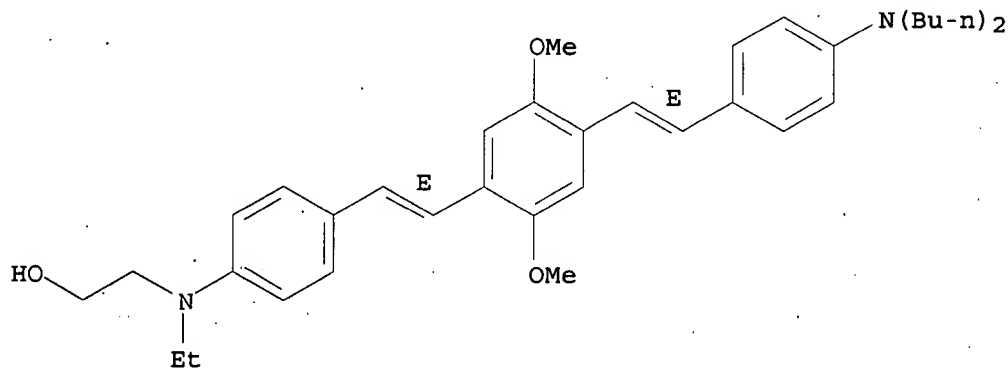
Double bond geometry as shown.



RN 352434-90-3 HCAPLUS

CN Ethanol, 2-[[4-[(1E)-2-[4-[(1E)-2-[4-(dibutylamino)phenyl]ethenyl]-2,5-dimethoxyphenyl]ethenyl]phenyl]ethylamino]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



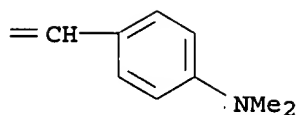
CN Lysine, N2,N6-bis[(1,1-dimethylethoxy)carbonyl]-,
[[4-[2-[4-(diethylamino)phenyl]ethenyl]phenyl]imino]di-2,1-
ethanediyl ester (9CI) (CA INDEX NAME)

$$\begin{array}{c} \text{O} \\ || \\ \text{t-BuO}-\text{C}-\text{NH} \\ | \\ (\text{CH}_2)_4-\text{CH}-\text{C}(=\text{O})-\text{O}-\text{CH}_2-\text{CH}_2-\text{N}(\text{C}_6\text{H}_4-\text{CH}=\text{CH}-\text{C}_6\text{H}_4) \\ | \\ \text{O} \\ | \\ \text{CH}_2-\text{CH}_2-\text{O}-\text{C}(=\text{O})-\text{CH}-(\text{CH}_2)_4- \\ | \\ \text{NH}-\text{C}(=\text{O})-\text{OBu-t} \end{array}$$
$$\begin{array}{c} \text{--- NEt}_2 \\ \text{--- NH---C---OBu-t} \\ \quad \parallel \\ \quad \text{O} \end{array}$$

CN Lysine, N2,N6-bis[(1,1-dimethylethoxy)carbonyl]-,
[[4-[4-[4-(dimethylamino)phenyl]-1,3-butadienyl]phenyl]imino]di-2,1-
ethanediyl ester (9CI) (CA INDEX NAME)

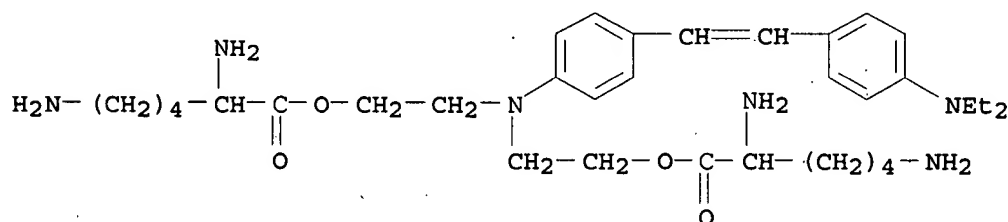
$$\begin{array}{c}
 \text{O} \\
 \parallel \\
 \text{t-BuO}-\text{C}-\text{NH} \\
 \parallel \\
 \text{O} \\
 \text{t-BuO}-\text{C}-\text{NH}-(\text{CH}_2)_4-\text{CH}-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{N}-\text{C}_6\text{H}_4-\text{CH}=\text{CH}-\text{CH}=\text{CH}_2 \\
 \parallel \qquad \qquad \qquad \parallel \\
 \text{O} \qquad \qquad \qquad \text{O} \\
 \text{O} \qquad \qquad \qquad \text{O} \qquad \text{CH}_2-\text{CH}_2 \\
 \text{t-BuO}-\text{C}-\text{NH}-(\text{CH}_2)_4-\text{CH}-\text{C}-\text{O} \\
 \parallel \qquad \qquad \qquad \parallel \\
 \text{O} \qquad \qquad \qquad \text{O} \\
 \text{O} \qquad \qquad \qquad \text{O} \\
 \text{t-BuO}-\text{C}-\text{NH} \\
 \parallel \\
 \text{O}
 \end{array}$$

PAGE 1-B



RN 352437-76-4 HCAPLUS

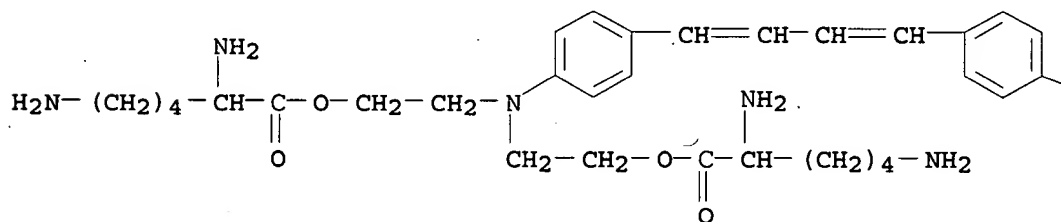
CN Lysine, [[4-[2-[4-(diethylamino)phenyl]ethenyl]phenyl]imino]di-2,1-ethanediyl ester, hexahydrochloride (9CI) (CA INDEX NAME)



● 6 HCl

RN 352438-15-4 HCAPLUS

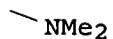
CN Lysine, [[4-[4-[4-(dimethylamino)phenyl]-1,3-butadienyl]phenyl]imino]di-2,1-ethanediyl ester, hexahydrochloride (9CI) (CA INDEX NAME)



● 6 HCl

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PAGE 1-B



IT 352434-82-3 352434-85-6 352437-77-5

352437-78-6 352438-22-3

RL: PRP (Properties); TEM (Technical or engineered material use);

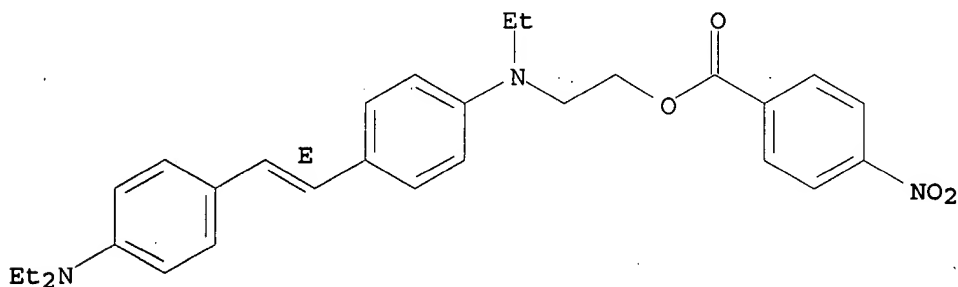
USES (Uses)

(two-photon absorbing optical materials and their use)

RN 352434-82-3 HCAPLUS

CN Ethanol, 2-[[4-[(1E)-2-[4-(diethylamino)phenyl]ethenyl]phenyl]ethylamino]-, 4-nitrobenzoate (ester) (9CI) (CA INDEX NAME)

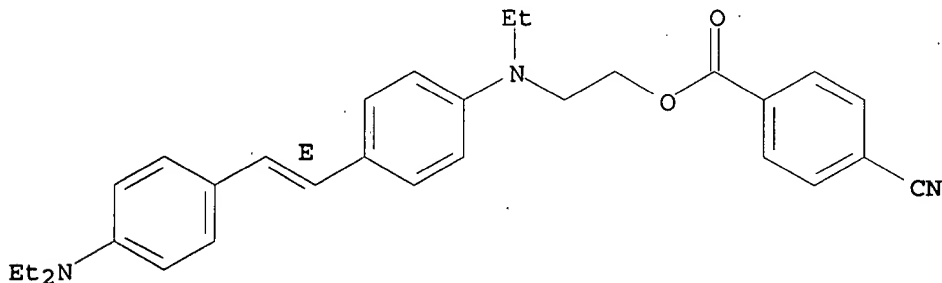
Double bond geometry as shown.



RN 352434-85-6 HCAPLUS

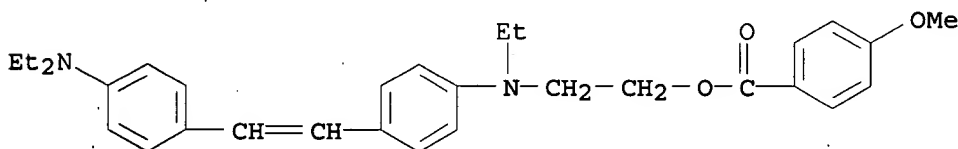
CN Benzoic acid, 4-cyano-, 2-[[4-[(1E)-2-[4-(diethylamino)phenyl]ethenyl]phenyl]ethylamino]ethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



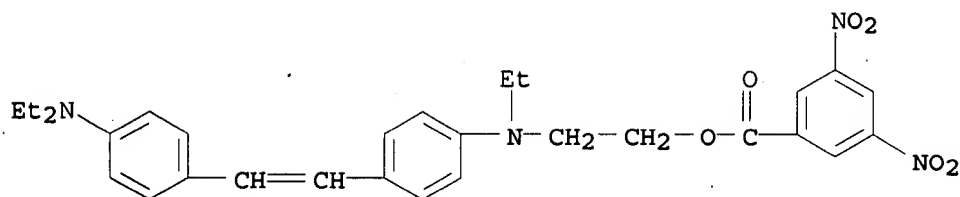
RN 352437-77-5 HCAPLUS

CN Benzoic acid, 4-methoxy-, 2-[[4-[2-[4-(diethylamino)phenyl]ethenyl]phenyl]ethylamino]ethyl ester (9CI) (CA INDEX NAME)



RN 352437-78-6 HCAPLUS

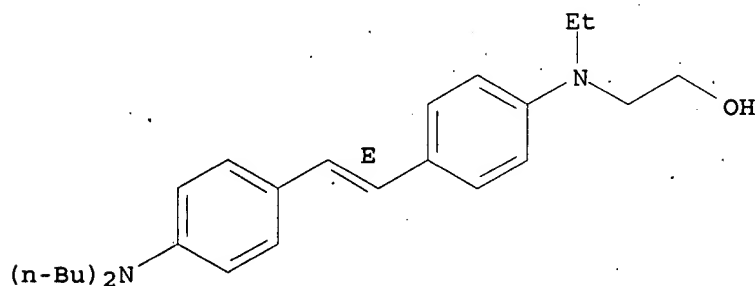
CN Ethanol, 2-[[4-[2-[4-(diethylamino)phenyl]ethenyl]phenyl]ethylamino]-, 3,5-dinitrobenzoate (ester) (9CI) (CA INDEX NAME)



RN 352438-22-3 HCAPLUS

CN Ethanol, 2-[[4-[(1E)-2-[4-(diethylamino)phenyl]ethenyl]phenyl]ethylamino]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

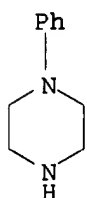


IT 92-54-6, 1-Phenylpiperazine

RL: RCT (Reactant); RACT (Reactant or reagent)
(two-photon absorbing optical materials and their use)

RN 92-54-6 HCAPLUS

CN Piperazine, 1-phenyl- (CA INDEX NAME)



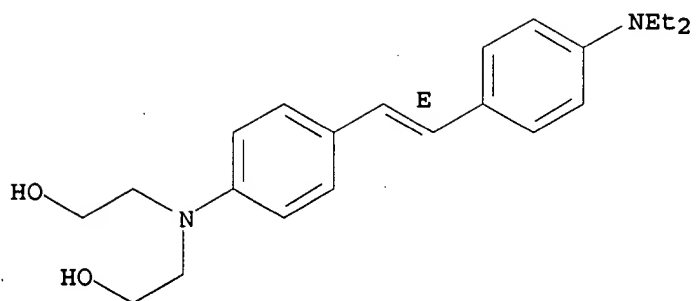
IT 352438-24-5P

RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(two-photon absorbing optical materials and their use)

RN 352438-24-5 HCAPLUS

CN Ethanol, 2,2'-[[4-[(1E)-2-[4-(diethylamino)phenyl]ethenyl]phenyl]imino]bis- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



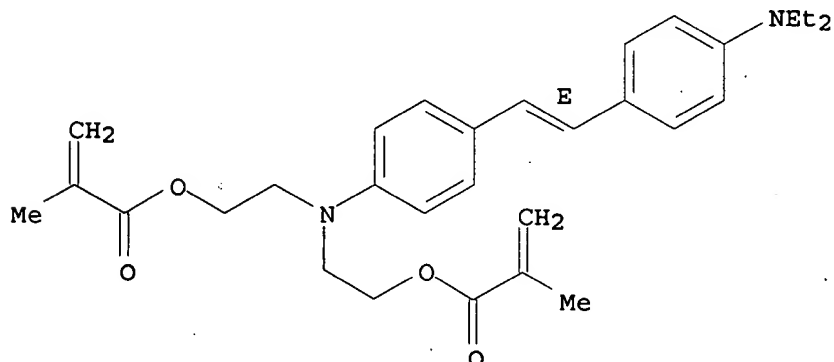
IT 223425-56-7P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(two-photon absorbing optical materials and their use)

RN 223425-56-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, [[4-[(1E)-2-[4-(diethylamino)phenyl]ethenyl]phenyl]imino]di-2,1-ethanediyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



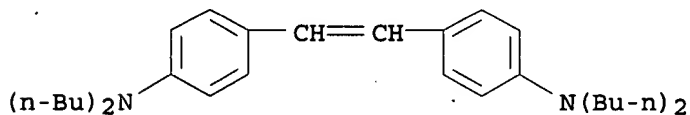
IT 202063-32-9 208263-44-9 304467-07-0

308286-91-1 352438-11-0 352438-27-8

RL: TEM (Technical or engineered material use); USES (Uses)
(two-photon absorbing optical materials and their use)

RN 202063-32-9 HCAPLUS

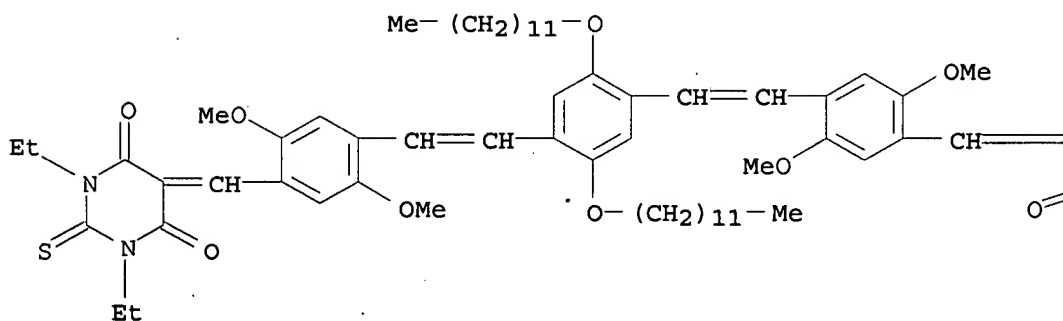
CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-dibutyl- (9CI) (CA INDEX NAME)



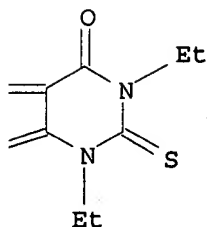
RN 208263-44-9 HCAPLUS

CN 4,6(1H,5H)-Pyrimidinedione, 5,5'-[[2,5-bis(dodecyloxy)-1,4-phenylene]bis[2,1-ethenediyl(2,5-dimethoxy-4,1-phenylene)methylidyne]]bis[1,3-diethylhydro-2-thioxo- (9CI) (CA INDEX NAME)

PAGE 1-A

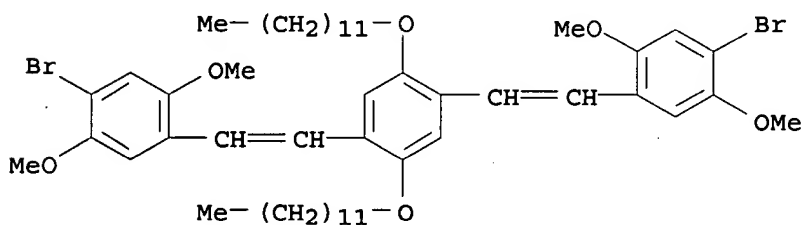


PAGE 1-B



RN 304467-07-0 HCAPLUS

CN Benzene, 1,4-bis[2-(4-bromo-2,5-dimethoxyphenyl)ethenyl]-2,5-bis(dodecyloxy)- (9CI) (CA INDEX NAME)

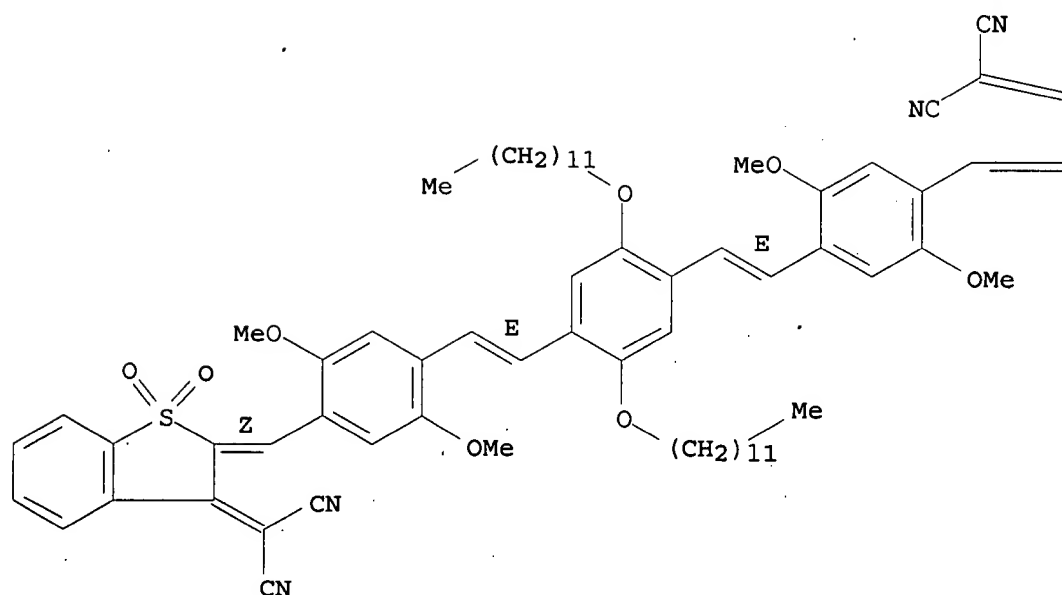


RN 308286-91-1 HCAPLUS

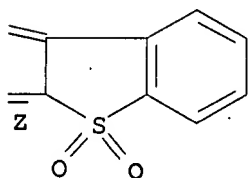
CN Propanedinitrile, 2,2'-[[2,5-bis(dodecyloxy)-1,4-phenylene]bis[(1E)-2,1-ethenediyl(2,5-dimethoxy-4,1-phenylene)methylidyne[(2Z)-1,1-dioxidobenzo[b]thiophene-2,3-diylidene]]]bis- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



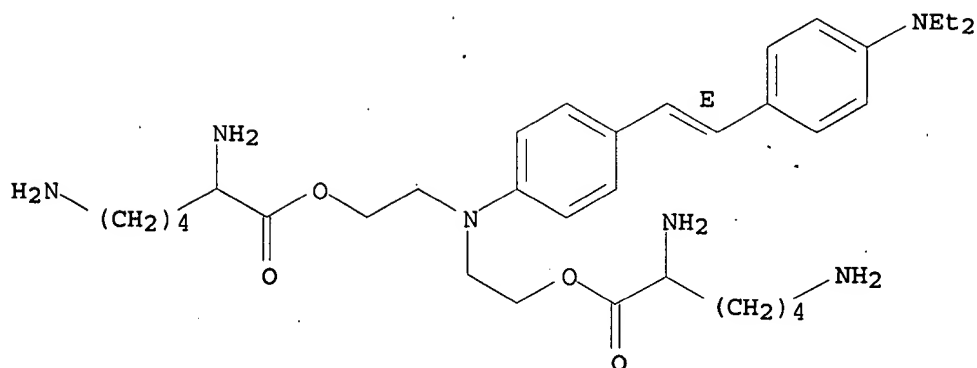
PAGE 1-B



RN 352438-11-0 HCAPLUS

CN Lysine, [[4-[(1E)-2-[4-(diethylamino)phenyl]ethenyl]phenyl]imino]di-
2,1-ethanediyl ester, hexahydrochloride (9CI) (CA INDEX NAME)

Double bond geometry as shown.

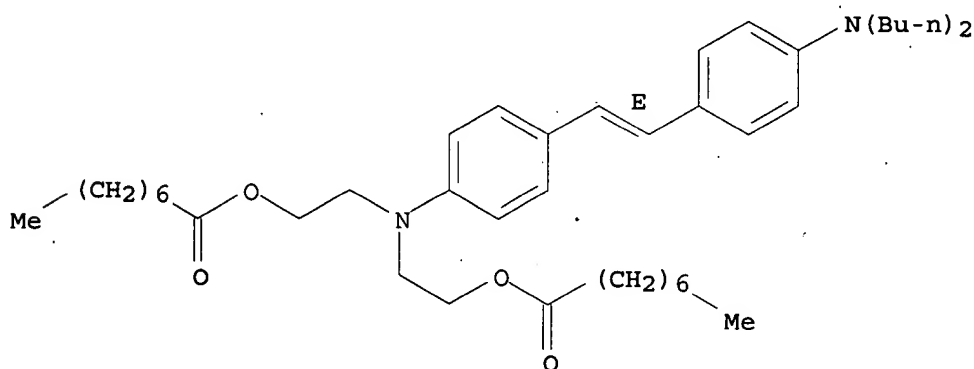


● 6 HCl

RN 352438-27-8 HCAPLUS

CN Octanoic acid, [[4-[(1E)-2-[4-(dibutylamino)phenyl]ethenyl]phenyl]imino]di-2,1-ethanediyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IC ICM C09K011-06

ICS C07D403-06; G02B005-22; G02F001-361

INCL 252582000

CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38

IT 72057-75-1 179677-50-0 180967-93-5

196107-51-4 208263-37-0 208263-38-1

208263-39-2 208263-40-5 352010-74-3

352010-75-4 352010-76-5 352010-77-6

352436-32-9 352436-56-7 352438-13-2

RL: PRP (Properties)

(two-photon absorbing optical materials and their use)

IT 352434-86-7P 352434-87-8P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);

TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(two-photon absorbing optical materials and their use)

IT 3230-09-9P 34266-56-3P 62555-98-0P 88542-15-8P

109995-80-4P 116942-09-7P 208263-41-6P
 223425-59-0P 304466-98-6P 304466-99-7P
 304467-08-1P 349533-53-5P 352437-02-6P
 352437-06-0P 352437-08-2P 352437-10-6P
 352437-80-0P 352437-81-1P 352437-82-2P
 352437-83-3P 352437-85-5P 352437-94-6P
 352438-01-8P 352438-03-0P 352438-04-1P
 352438-18-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(two-photon absorbing optical materials and their use)

IT 208263-42-7P 208263-43-8P 214626-73-0P
 304467-02-5P 320750-93-4P 352434-59-4P
 352434-74-3P 352434-88-9P 352434-90-3P
 352437-71-9P 352437-75-3P 352437-76-4P
 352438-15-4P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(two-photon absorbing optical materials and their use)

IT 352434-82-3 352434-85-6 352437-77-5
 352437-78-6 352438-22-3

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(two-photon absorbing optical materials and their use)

IT 50-00-0, Formaldehyde, reactions 68-12-2, N,N-Dimethylformamide, reactions 92-54-6, 1-Phenylpiperazine 109-77-3, Malononitrile 120-07-0, N-Phenyl diethanolamine 121-44-8, Triethylamine, reactions 123-31-9, 1,4-Benzenediol, reactions 141-52-6, Sodium ethoxide 143-15-7, 1-Bromododecane 148-87-8, N,N-Ethyl-2-cyanoethylaniline 288-32-4, Imidazole, reactions 594-19-4 603-35-0, Triphenylphosphine, reactions 622-75-3, 1,4-Bis(cyanomethyl)benzene 623-27-8, Terephthalaldehyde 920-46-7, Methacryloylchloride 1120-48-5, Dioctylamine 1204-86-0, 4-Morpholinobenzaldehyde 1205-64-7 2674-34-2, 1,4-Dibromo-2,5-dimethoxybenzene 2765-14-2, 4,4'-Dibromostilbene 4096-20-2, 1-Phenylpiperidine 4181-05-9, 4-Diphenylaminobenzaldehyde 5217-47-0, 1,3-Diethyl-2-thiobarbituric acid 6203-18-5, 4-Dimethylaminocinnamaldehyde 7044-91-9, 9,10-Anthracenedicarboxaldehyde 18162-48-6 27913-98-0 30525-89-4, Paraformaldehyde 32479-73-5, 1,3-Diethyl-2-oxobarbituric acid 52577-04-5 58632-95-4, BOC-ON 74228-25-4 85872-85-1 89419-51-2 100130-28-7 128184-34-9 174904-78-0 220716-63-2 232948-23-1 249514-82-7 352437-00-4 352437-86-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(two-photon absorbing optical materials and their use)

IT 352438-24-5P

RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(two-photon absorbing optical materials and their use)

IT 223425-56-7P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(two-photon absorbing optical materials and their use)

IT 202063-32-9 208263-44-9 304467-07-0
 308286-91-1 352438-11-0 352438-27-8

RL: TEM (Technical or engineered material use); USES (Uses)

(two-photon absorbing optical materials and their use)

REFERENCE COUNT: 83 THERE ARE 83 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

IN THE RE FORMAT

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ACCESSION NUMBER: 2000:902471 HCAPLUS

DOCUMENT NUMBER: 134:200129

TITLE: Nonlinear optical response of cyanobiphenyl liquid crystals to high-power, nanosecond laser radiation

AUTHOR(S): Lukishova, Svetlana G.

CORPORATE SOURCE: Liquid Crystal Institute, Kent State University, Kent, OH, 44242, USA

SOURCE: Journal of Nonlinear Optical Physics & Materials (2000), 9(3), 365-411

CODEN: JNOMFV; ISSN: 0218-8635

PUBLISHER: World Scientific Publishing Co. Pte. Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Results from studies are summarized into: (1) transient refractive and absorptive (2-photon) nonlinearities at 0.532 μm by the Z-scan method, and (2) reflective nonlinearity in the near-IR, of linearly nonabsorbing cyanobiphenyl liquid crystals under nanosecond laser irradiation (1) For isotropic liquid crystals at the several-ns time scale and several tens- μm beam-waist-diameter, transient mol.-reorientation and thermal/d. refractive nonlinearities compete in changing the sign of the total transient refractive nonlinearity. For the different, given pulse durations, the influence of coupled thermal and d. effects on nonlinear refraction depends, through buildup time, on the beam-waist diameter Nonlinear absorption coeffs. depend on the incident intensity. For planar nematic layers, cumulative effects in heating (and in refractive nonlinearity) were observed even at low, 2-10 Hz pulse repetition rate. These results are useful for optical power limiting applications, and for intensity and beam-quality sensors of pulsed, high-power lasers. (2) Reflective nonlinearity of chiral-nematic (cholesteric) mirrors near selective reflection conditions for circular polarized light at $\lambda = 1.064 \mu\text{m}$ was studied both under free space irradiation and inside a laser resonator. Specially chosen exptl. irradiation conditions make it possible to attribute the observed changing of reflectivity to athermal helix unwinding by the optical field. The results can find applications in laser-resonator mirrors, Q-switches and soft apertures for beam-profile formation, and also in showing the limits of use cholesteric optical elements in high-power laser beams.

IT 196107-51-4

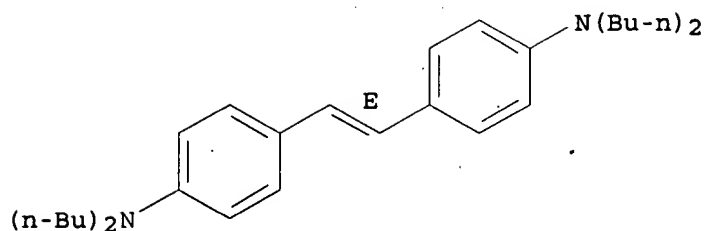
RL: PRP (Properties)

(nonlinear optical response to high-power ns laser radiation)

RN 196107-51-4 HCAPLUS

CN Benzenamine, 4,4'-(1E)-1,2-ethenediylbis[N,N-dibutyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 40817-08-1, 5CB 41122-71-8, 7CB 52364-73-5 54211-46-0, 5CT 63799-11-1, CB15 196107-51-4

RL: PRP (Properties)

(nonlinear optical response to high-power ns laser radiation)

REFERENCE COUNT: 192 THERE ARE 192 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:740355 HCAPLUS

DOCUMENT NUMBER: 134:63520

TITLE: Design, synthesis and characterization of new bimechanistic optical power limiters based on reverse saturable and two-photon absorption

AUTHOR(S): Spangler, C. W.; Elandalousi, E. H.; Ozer, B.; Ashworth, K.; Madrigal, L.; Reeves, B.

CORPORATE SOURCE: Department of Chemistry and Biochemistry, Optical Technology Center, Montana State University, Bozeman, MT, 59717, USA

SOURCE: Materials Research Society Symposium Proceedings (2000), 597 (Thin Films for Optical Waveguide Devices and Materials for Optical Limiting), 369-379

CODEN: MRSPDH; ISSN: 0272-9172

PUBLISHER: Materials Research Society

DOCUMENT TYPE: Journal

LANGUAGE: English

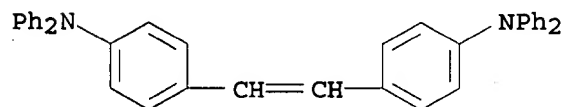
AB During the past 5 yr there was considerable progress in the design of organic materials for optical power limiting (OPL) applications. One of the more promising and widely studied material approaches involves reverse saturable absorption (RSA) from various excited states. The authors have recently been examining the efficacy of using highly absorbing photogenerated charge states for RSA. Both polaronic radical cations and bipolaronic dications are possible candidates for this mode of optical limiting. Equally intriguing are new approaches to designing chromophores with large 2-photon absorption (TPA) cross sections. For some pulse durations the effective 2-photon cross-section for bis-(diphenylamino)diphenylpolyenes, and dendrimers based on these repeat units, are extraordinarily large, indicative of excited state absorption. In this presentation the authors will discuss the possibility of combining these 2 optical limiting mechanistic paradigms in single structures, which may then be considered as bimechanistic optical power limiters. A significant amount of review material is included.

IT 116942-09-7

RL: PRP (Properties)
 (design, synthesis and characterization of new bimechanistic
 optical power limiters based on reverse saturable and
 two-photon absorption)

RN 116942-09-7 HCAPLUS

CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-diphenyl- (CA INDEX NAME)



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 22

IT 55035-42-2 116942-09-7 188982-18-5 208053-97-8

208053-99-0 251636-91-6 313964-09-9

RL: PRP (Properties)

(design, synthesis and characterization of new bimechanistic
 optical power limiters based on reverse saturable and
 two-photon absorption)

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L72 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:562837 HCAPLUS

DOCUMENT NUMBER: 133:171467

TITLE: Preparation of (piperazinylsulfonyl)benzenedithiol metal complexes for optical disks

INVENTOR(S): Hirako, Chiho; Kimura, Satoshi; Suzuki, Michio; Hata, Hiroyuki

PATENT ASSIGNEE(S): Sumitomo Seika K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

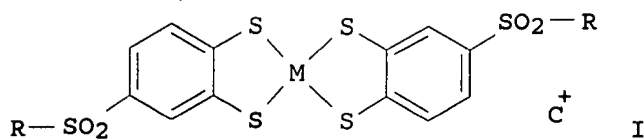
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

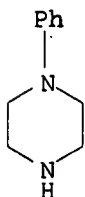
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2000226377	A	20000815	JP 1999-113878	19990421
PRIORITY APPLN. INFO.:			JP 1998-342206	A 19981201

OTHER SOURCE(S): MARPAT 133:171467
 GI



- AB The complexes I [R = (un)substituted piperazinyl; M = transition metal; C+ = quaternary ammonium, quaternary phosphonium], useful not only as singlet oxygen quenchers but also as recording layer itself of optical disks, are prepared by (1) treating 3,4-dihalobenzenesulfonyl chloride with piperazine or substituted piperazinyl compds., (2) converting the resulting sulfonyldihalobenzenes into benzenedithiols, and then (3) treatment of the benzenedithiols with transition metal salts and quaternary ammonium or phosphonium salts. 1,2-C6H4Cl2 was treated with a mixture of CH2ClCH2Cl, ClSO3H, and Na2SO4 at 75° for 2 h and the reaction mixture containing the resulting 3,4-dichlorobenzenesulfonic acid was further treated with SOCl2 at 50-55° for 2 h. The reaction mixture was cooled, poured into H2O, stirred at 0-10° for 0.5 h, and then separated into an aqueous phase and an organic phase. The organic phase was treated with N-methylpiperazine and CH2ClCH2Cl at room temperature for 1 h to give 95% 4-(N-methylpiperazinylsulfonyl)-1,2-dichlorobenzene. This was treated with DMF and NaSH at 70° for 3 h and then treated with Fe and S at 90-95° for 6 h. The reaction mixture was treated with MeOH and NaOMe at room temperature for 1 h, treated with NiCl2.6H2O at room temperature for 3 h, and then treated with Bu4N+ Br- at room temperature for 2 h to give 80% I (R = 4-methylpiperazinyl, M = Ni, C+ = Bu4N+).
- IT 92-54-6, 1-Phenylpiperazine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of (piperazinylsulfonyl)benzenedithiol transition metal complex quaternary ammonium or phosphonium salts as dyes and singlet oxygen quenchers for optical disks)
- RN 92-54-6 HCAPLUS
- CN Piperazine, 1-phenyl- (CA INDEX NAME)



- IC ICM C07D241-04
 ICS C07D239-42; C07D295-22; C07F009-54; C07F001-08; C07F015-04
- CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 41, 74
- IT 92-54-6, 1-Phenylpiperazine 95-50-1, 1,2-Dichlorobenzene
 108-49-6, 2,6-Dimethylpiperazine 109-01-3, N-Methylpiperazine
 583-53-9, 1,2-Dibromobenzene 1643-19-2, Tetrabutylammonium bromide
 7447-39-4, Cupric chloride, reactions 7718-54-9, Nickel(II)
 chloride, reactions 20980-22-7, 1-(2-Pyrimidyl)piperazine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of (piperazinylsulfonyl)benzenedithiol transition metal

complex quaternary ammonium or phosphonium salts as dyes and
singlet oxygen quenchers for optical disks)

L72 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:212396 HCAPLUS

DOCUMENT NUMBER: 132:285507

TITLE: Theoretical studies on non-resonant third-order
nonlinear optical properties of symmetrical
stilbene derivatives

AUTHOR(S): Liu, Chun-Ling; Su, Zhong-Min; Feng, Ji-Kang;
Ren, Al-Min; Sun, Jia-Zhong; Zha, Zi-Zhong;
Wang, Qi

CORPORATE SOURCE: Inst. Opto-electronics, National Key Lab.
Tunable Laser Tech., Haerbin Inst. Tech.,
Haerbin, 150001, Peop. Rep. China

SOURCE: Huaxue Xuebao (2000), 58(2), 184-188
CODEN: HHHPA4; ISSN: 0567-7351

PUBLISHER: Kexue Chubanshe

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB The geometry and UV - visible spectra of sym. stilbene derivs. are
systematically studied by PM3 and INDO/CI methods. The calculated
results are basically consistent with the exptl. values. Also, the
non - resonant 3rd - order nonlinear optical susceptibilities of
mols. are calculated according to the sum - over - states(SOS)
expression. The relation between the structures and properties was
explained micromechanically by electronic delocalization effects.

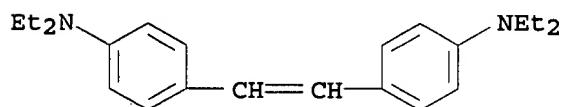
IT 72057-75-1 116942-09-7 202063-32-9

RL: PRP (Properties)

(theor. studies on non-resonant third-order nonlinear
optical properties of sym. stilbene derivs.)

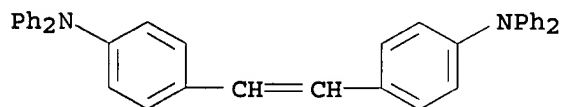
RN 72057-75-1 HCAPLUS

CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-diethyl- (CA INDEX NAME)



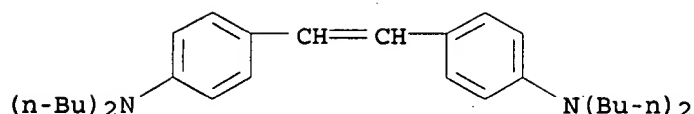
RN 116942-09-7 HCAPLUS

CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-diphenyl- (CA INDEX NAME)



RN 202063-32-9 HCAPLUS

CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-dibutyl- (9CI) (CA INDEX
NAME)



CC 73-2 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 22, 65

IT 621-96-5, 4,4'-Diaminostilbene 1588-49-4, 4,4'-Dimethylstilbene
 1931-49-3 2039-68-1, 4,4'-Diphenylstilbene 25347-49-3
 72057-75-1 116942-09-7 202063-32-9
 263902-12-1

RL: PRP (Properties)

(theor. studies on non-resonant third-order nonlinear optical properties of sym. stilbene derivs.)

L72 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:532015 HCAPLUS

DOCUMENT NUMBER: 132:16862

TITLE: Two-photon and higher-order absorptions and optical limiting properties of bis-donor substituted conjugated organic chromophores

AUTHOR(S): Perry, J. W.; Barlow, S.; Ehrlich, J. E.; Heikal, A. A.; Hu, Z.-Y.; Lee, I.-Y.; Mansour, K.; Marder, S. R.; Rockel, H.; Rumi, M.; Thayumanavan, S.; Wu, X. L.

CORPORATE SOURCE: Jet Propulsion Laboratory, California Institute Technology, Pasadena, CA, 91109, USA

SOURCE: MCLC S&T, Section B: Nonlinear Optics (1999), 21(1-4), 225-243

CODEN: MCLOEB; ISSN: 1058-7268

PUBLISHER: Gordon & Breach Science Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two-photon absorption spectra were measured for bis-donor diphenylpolyene derivs. with varying conjugation lengths and end groups. Large 2-photon absorptivities are observed via nanosecond nonlinear transmission measurements in comparison to picosecond nonlinear transmission and 2-photon excited fluorescence methods, which suggests a large contribution of excited-state absorption to the nanosecond nonlinear transmission results. These results are reasonably well modeled as a combined 2-photon and 2-photon-induced excited-state absorption process. Strong nonlinear absorption of nanosecond pulses is observed for bis(diarylamino)biphenyl derivs. at 525 nm. This blue-shifted nonlinear absorption, relative to bis(dialkylamino)stilbene, makes possible the design of broadband optical limiting materials based on a combination of derivs. with varying conjugation lengths and end groups. We have demonstrated the feasibility of achieving broadband response using a tandem combination of cells containing 3 such compds.

IT 196107-51-4 208263-40-5

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)

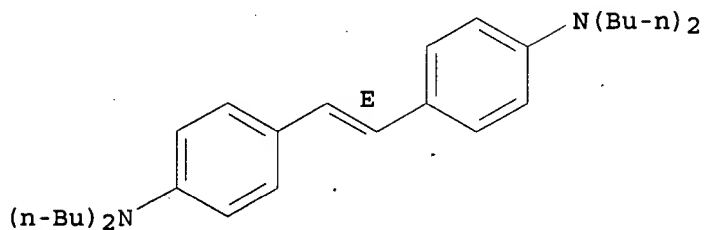
(two-photon and higher-order absorptions and optical limiting properties of bis-donor substituted conjugated organic chromophores)

RN 196107-51-4 HCAPLUS

CN Benzenamine, 4,4'-(1E)-1,2-ethenediylbis[N,N-dibutyl- (9CI) (CA

INDEX NAME)

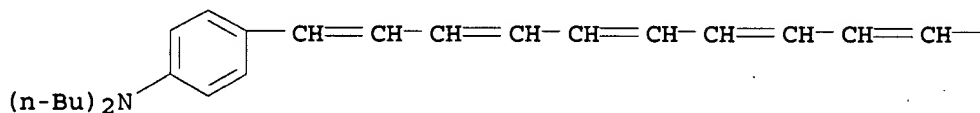
Double bond geometry as shown.



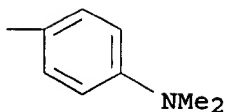
RN 208263-40-5 HCAPLUS

CN Benzenamine, 4-[10-[4-(dibutylamino)phenyl]-1,3,5,7,9-decapentaenyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 196107-51-4 197633-82-2 197633-84-4 202748-68-3

202748-69-4 202748-71-8 202748-73-0 208263-40-5

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)

(two-photon and higher-order absorptions and optical limiting properties of bis-donor substituted conjugated organic chromophores)

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 18 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:192666 HCAPLUS

DOCUMENT NUMBER: 130:303941

TITLE: Two-photon polymerization initiators for three-dimensional optical data storage and microfabrication

AUTHOR(S): Cumpston, Brian H.; Ananthavel, Sundaravel P.; Barlow, Stephen; Dyer, Daniel L.; Ehrlich, Jeffrey E.; Erskine, Lael L.; Heikal, Ahmed A.; Kuebler, Stephen M.; Lee, I.-Y. Sandy; McCord-Maughon, Dianne; Qin, Jinqui; Rockel,

CORPORATE SOURCE: Harald; Rumi, Mariacristina; Wu, Xiang-Li; Marder, Seth R.; Perry, Joseph W.
 SOURCE: Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA, 91125, USA
 SOURCE: Nature (London) (1999), 398(6722), 51-54
 CODEN: NATUAS; ISSN: 0028-0836
 PUBLISHER: Macmillan Magazines
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Two-photon excitation provides a means of activating chemical or phys. processes with high spatial resolution in three dimensions and has made possible the development of three-dimensional fluorescence imaging, optical data storage and lithog. microfabrication. These applications take advantage of the fact that the two-photon absorption probability depends quadratically on intensity, so under tight-focusing conditions, the absorption is confined at the focus to a volume of order λ^3 (where λ is the laser wavelength). Any subsequent process, such as fluorescence or a photoinduced chemical reaction, is also localized in this small volume. Although three-dimensional data storage and microfabrication have been illustrated using two-photon-initiated polymerization of resins incorporating conventional UV-absorbing initiators, such photopolymer systems exhibit low photosensitivity as the initiators have small two-photon absorption cross-sections (δ). Consequently, this approach requires high laser power, and its widespread use remains impractical. The authors report on a class of π -conjugated compds. that exhibit large δ (as high as $1,250 + 10^{-50}$ cm⁴s per photon) and enhanced two-photon sensitivity relative to UV initiators. Two-photon excitable resins based on these new initiators have been developed and used to demonstrate a scheme for three-dimensional data storage which permits fluorescent and refractive read-out, and the fabrication of three-dimensional microoptical and micromech. structures, including photonic-bandgap-type structures.

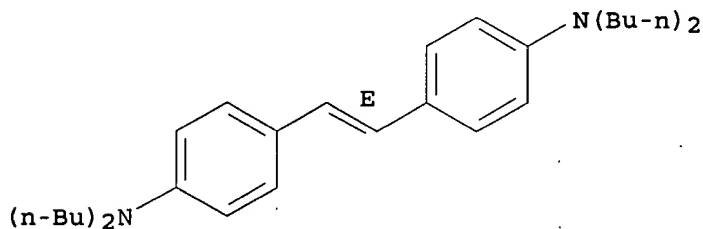
IT 196107-51-4 223425-56-7 223425-59-0

RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
 (two-photon polymerization initiators for three-dimensional optical data storage and lithog. microfabrication)

RN 196107-51-4 HCAPLUS

CN Benzenamine, 4,4'-(1E)-1,2-ethenediylbis[N,N-dibutyl- (9CI) (CA INDEX NAME)

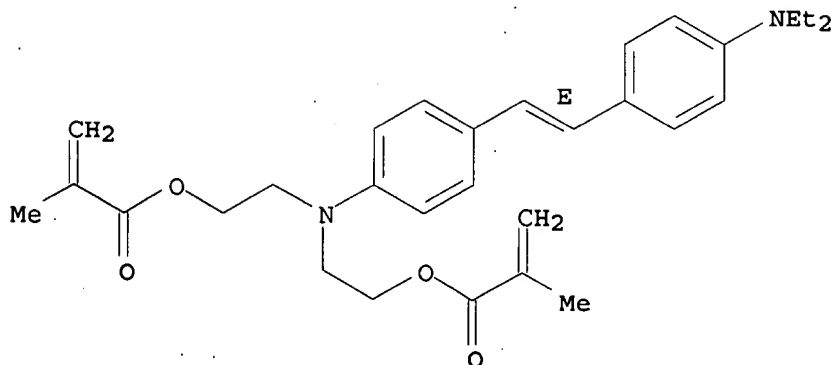
Double bond geometry as shown.



RN 223425-56-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, [[4-[(1E)-2-[4-(diethylamino)phenyl]ethenyl]phenyl]imino]di-2,1-ethanediyl ester (9CI) (CA INDEX NAME)

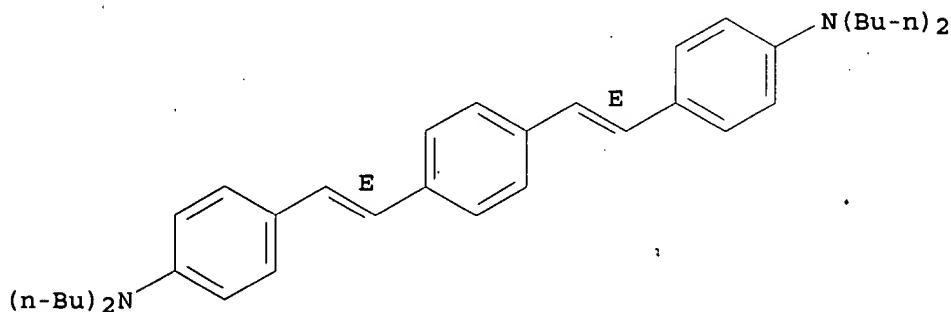
Double bond geometry as shown.



RN 223425-59-0 HCAPLUS

CN Benzenamine, 4,4'-[1,4-phenylenedi-(1E)-2,1-ethenediyl]bis[N,N-dibutyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 196107-51-4 202748-69-4 223425-48-7 223425-50-1

223425-53-4 223425-56-7 223425-59-0

223425-61-4 223425-64-7

RL: CAT (Catalyst use); PRP (Properties); USES (Uses)

(two-photon polymerization initiators for three-dimensional optical data storage and lithog. microfabrication)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:336251 HCAPLUS

DOCUMENT NUMBER: 129:47210

TITLE: New photopolymers based on two-photon absorbing chromophores and application to three-dimensional microfabrication and optical storage

AUTHOR(S): Cumpston, B. H.; Ehrlich, J. E.; Erskine, L. L.; Heikal, A. A.; Hu, Z.-Y.; Lee, I.-Y. S.; Levin, D.; Marder, S. R.; McCord, D. J.; Perry, J. W.; Rockel, H.; Rumi, M.; Wu, X.-L.

CORPORATE SOURCE: Jet Propulsion Laboratory, California Institute

SOURCE: of Technology, Pasadena, CA, 91109, USA
Materials Research Society Symposium Proceedings (1998), 488(Electrical, Optical, and Magnetic Properties of Organic Solid-State Materials IV), 217-226
CODEN: MRSPDH; ISSN: 0272-9172

PUBLISHER: Materials Research Society

DOCUMENT TYPE: Journal

LANGUAGE: English

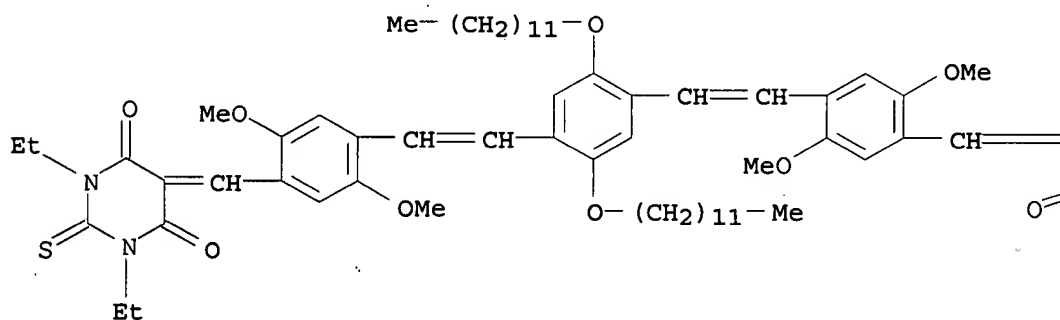
AB . Mols. exhibiting strong 2-photon absorption hold great potential for a wide range of applications including 2-photon fluorescence imaging, 3-dimensional (3D) optical data storage, and 3-dimensional microfabrication. The authors observed 2-photon absorptivities $\leq 1500 + 10^{-50} \text{ cm}^4 \text{ s/photon}$ in bis-donor diphenylpolyene derivs. that are correlated to simultaneous charge transfer from the end groups to the polyene bridge in the mol. Many of these mols. are also excellent photoexcitable electron donors that can initiate charge-transfer reactions with acrylate monomers. Marcus theory is used to describe the efficiency of these charge-transfer reactions. Polymerization rates also were measured and these 2-photon chromophores display increased sensitivity and recording speed over conventional UV photo-initiators. The fabrication of complex, 3-dimensional structures by 2- photon polymerization is demonstrated and discussed in the context of advanced photonic applications.

IT 208263-44-9
RL: DEV (Device component use); USES (Uses)
(new photopolymers based on two-photon absorbing chromophores and application to three-dimensional microfabrication and optical storage)

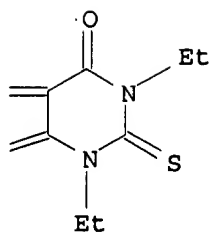
RN 208263-44-9 HCAPLUS

CN 4,6(1H,5H)-Pyrimidinedione, 5,5'-[[2,5-bis(dodecyloxy)-1,4-phenylene]bis[2,1-ethenediyl(2,5-dimethoxy-4,1-phenylene)methylidyne]]bis[1,3-diethylhydro-2-thioxo- (9CI) (CA INDEX NAME)

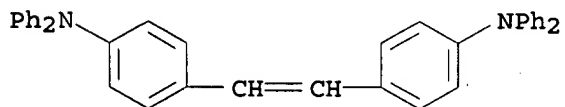
PAGE 1-A



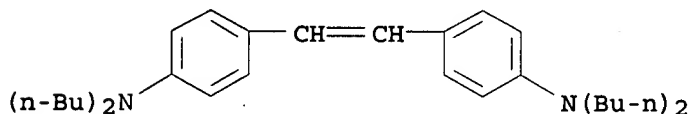
PAGE 1-B



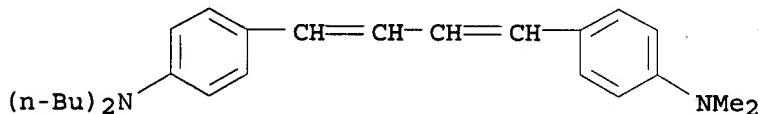
IT 116942-09-7P 202063-32-9P 208263-37-0P
 208263-38-1P 208263-39-2P 208263-40-5P
 208263-41-6P 208263-42-7P 208263-43-8P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (new photopolymers based on two-photon absorbing chromophores and
 application to three-dimensional microfabrication and
 optical storage)
 RN 116942-09-7 HCAPLUS
 CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-diphenyl- (CA INDEX NAME)



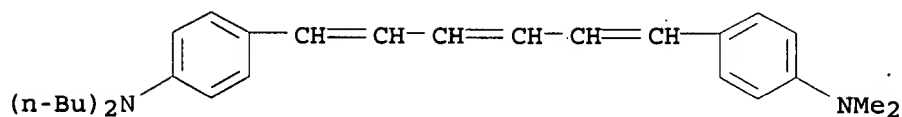
RN 202063-32-9 HCAPLUS
 CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-dibutyl- (9CI) (CA INDEX NAME)



RN 208263-37-0 HCAPLUS
 CN Benzenamine, 4-[4-[4-(dibutylamino)phenyl]-1,3-butadienyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)

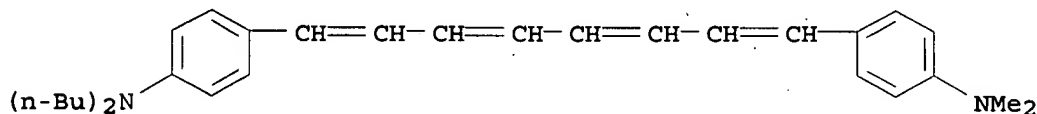


RN 208263-38-1 HCAPLUS
 CN Benzenamine, 4-[6-[4-(dibutylamino)phenyl]-1,3,5-hexatrienyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 208263-39-2 HCAPLUS

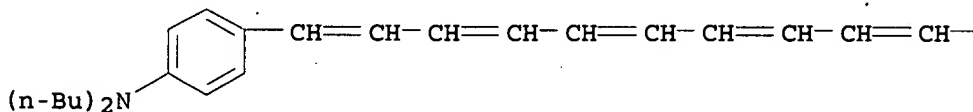
CN Benzenamine, 4-[8-[4-(dibutylamino)phenyl]-1,3,5,7-octatetraenyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)



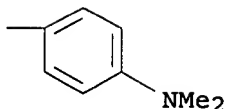
RN 208263-40-5 HCAPLUS

CN Benzenamine, 4-[10-[4-(dibutylamino)phenyl]-1,3,5,7,9-decapentaenyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)

PAGE 1-A

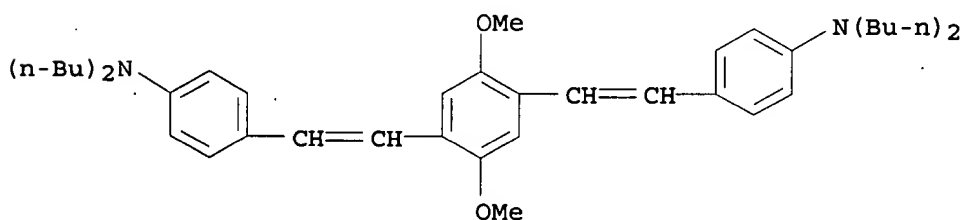


PAGE 1-B



RN 208263-41-6 HCAPLUS

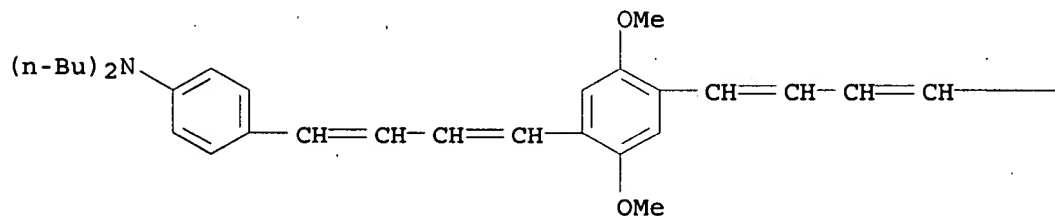
CN Benzenamine, 4,4'-[(2,5-dimethoxy-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-dibutyl- (CA INDEX NAME)]



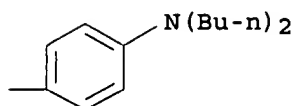
RN 208263-42-7 HCAPLUS

CN Benzenamine, 4,4'-[(2,5-dimethoxy-1,4-phenylene)di-1,3-butadiene-4,1-diyl]bis[N,N-dibutyl- (9CI) (CA INDEX NAME)]

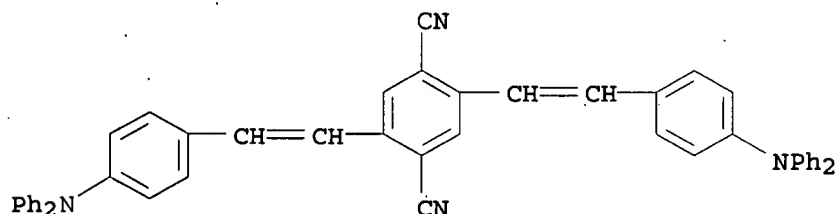
PAGE 1-A



PAGE 1-B



RN 208263-43-8 HCAPLUS
 CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 38
 IT 208263-44-9
 RL: DEV (Device component use); USES (Uses)
 (new photopolymers based on two-photon absorbing chromophores and application to three-dimensional microfabrication and optical storage)
 IT 116942-09-7P 202063-32-9P 208263-37-0P
 208263-38-1P 208263-39-2P 208263-40-5P
 208263-41-6P 208263-42-7P 208263-43-8P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (new photopolymers based on two-photon absorbing chromophores and application to three-dimensional microfabrication and optical storage)
 REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1998:33767 HCAPLUS
 DOCUMENT NUMBER: 128:153819
 TITLE: Two-photon absorbing organic chromophores for optical limiting
 AUTHOR(S): Ehrlich, J. E.; Wu, X. L.; Lee, I. -Y. S.;

CORPORATE SOURCE: Heikal, A. A.; Hu, Z. -Y.; Rockel, H.; Marder, S. R.; Perry, J. W.
Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, 91109, USA

SOURCE: Materials Research Society Symposium Proceedings (1997), 479 (Materials for Optical Limiting II), 9-15
CODEN: MRSPDH; ISSN: 0272-9172
Materials Research Society

PUBLISHER: Journal

DOCUMENT TYPE: English

LANGUAGE: English

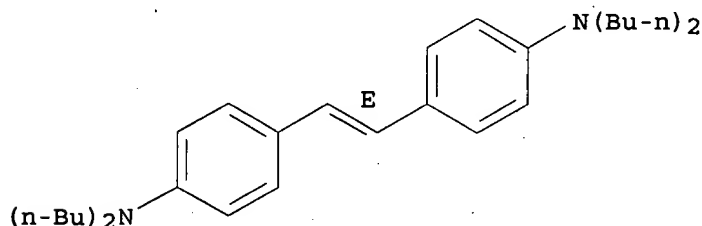
AB Strong optical limiting and large two-photon absorptivities are reported for a class of bis-donor diphenylpolyene derivs. with varying polyene bridge lengths. These mols. exhibit strong optical limiting using nanosecond pulses over a broad spectral range. Bis(diphenylamino)stilbene exhibits a 90 nm red shift of its optical limiting band, and only a minimal shift of about 13 nm of its lowest one-photon electronic absorption band relative to bis(di-n-butylamino)stilbene. This suggests a potential for broadband optical limiting with high transparency using mixts. of such compds. Pulse width dependent nonlinear transmission measurements suggest that two-photon pumped excited-state absorption contributes significantly to the limiting of nanosecond pulses.

IT 196107-51-4
RL: PRP (Properties)
(two-photon absorbing organic chromophores for optical limiting)

RN 196107-51-4 HCAPLUS

CN Benzenamine, 4,4'-(1E)-1,2-ethenediylbis[N,N-dibutyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



CC 22-13 (Physical Organic Chemistry)

IT 81-88-9, Rhodamine B 196107-51-4 202748-68-3
202748-69-4 202748-71-8 202748-73-0
RL: PRP (Properties)
(two-photon absorbing organic chromophores for optical limiting)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:23187 HCAPLUS

DOCUMENT NUMBER: 128:134086

TITLE: Two-photon absorption and broadband optical limiting with bis-donor stilbenes

AUTHOR(S): Ehrlich, J. E.; Wu, X. L.; Lee, I. -Y. S.; Hu, Z. -Y.; Rockel, H.; Marder, S. R.; Perry, J. W.

CORPORATE SOURCE: Jet Propulsion Laboratory and Beckman Institute,
California Institute of Technology, Pasadena,
CA, 91109, USA.

SOURCE: Optics Letters (1997), 22(24), 1843-1845
CODEN: OPLEDP; ISSN: 0146-9592

PUBLISHER: Optical Society of America

DOCUMENT TYPE: Journal

LANGUAGE: English

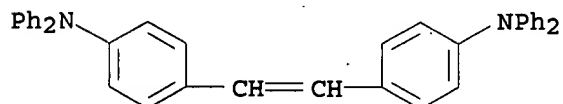
AB Large two-photon absorptivities are reported for sym. bis-donor stilbene derivs. with dialkylamino or diphenylamino groups. These mols. exhibit strong optical limiting of nanosecond pulses over a broad spectral range in the visible. Relative to bis(di-n-butylamino)stilbene, bis(diphenylamino)stilbene exhibits a 90-nm red shift of its optical limiting band but only a minimal shift of .apprx.13 nm of its lowest 1-photon electronic absorption band. Mixts. of these compds. offer an unprecedented combination of broad optical limiting bandwidth and high linear transparency.

IT 116942-09-7 202063-32-9

RL: PRP (Properties)
(two-photon absorption and broadband optical limiting with bis-donor stilbenes)

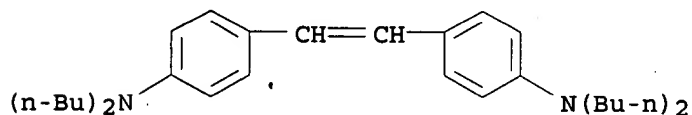
RN 116942-09-7 HCAPLUS

CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-diphenyl- (CA INDEX NAME)



RN 202063-32-9 HCAPLUS

CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-dibutyl- (9CI) (CA INDEX NAME)



CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 116942-09-7 202063-32-9

RL: PRP (Properties)
(two-photon absorption and broadband optical limiting with bis-donor stilbenes)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:114181 HCAPLUS

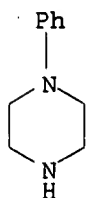
DOCUMENT NUMBER: 126:257000

TITLE: Azo polymers for reversible optical storage: 12. Poly{1-acryloyl-4-[4-(4-nitrophenylazo)phenyl]piperazine}

AUTHOR(S): Meng, X.; Natansohn, A.; Rochon, P.

CORPORATE SOURCE: Dep. Chem., Queen's Univ., Kingston, ON, K7L

3N6, Can.
 SOURCE: Supramolecular Science (1996), 3(4), 207-213
 CODEN: SUSCFX; ISSN: 0968-5677
 PUBLISHER: Elsevier
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Two azo-containing vinyl monomers, 1-acryloyl-4-[4-(4-nitrophenylazo)phenyl]piperazine (ANPP) and 1-methacryloyl-4-[4-(4-nitrophenylazo)phenyl]piperazine (MNPP), were synthesized. MNPP did not polymerize in a few solvents, with a few free radical initiators and at a few temps. PANPP is amorphous with a Tg of 156°C and decomp. above 230°C. Birefringence can be induced by a polarized laser (514 nm) on a pANPP film to a level of 0.1 and is very stable. Comparison is made with poly {4'-[(2-(acryloyloxy)ethyl)ethylamino]-4-nitroazobenzene} (pDRIA). Biexponential curve fitting shows a lower writing rate for pANPP. Both the slow response to the laser and the higher stability of the photoinduced birefringence are due to the 'rigid' piperazine linkage between azobenzene groups and backbone which prevents the azo groups from rotating freely. PANPP decomp. under long term exposure to the laser.
 IT 92-54-6, 1-Phenylpiperazine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis and photoinduced birefringence of azo polymers for reversible optical storage)
 RN 92-54-6 HCAPLUS
 CN Piperazine, 1-phenyl- (CA INDEX NAME)



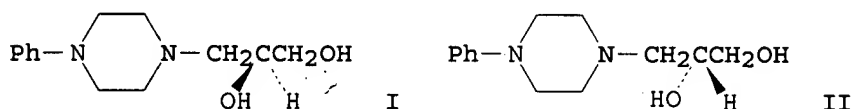
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35, 36
 IT 92-54-6, 1-Phenylpiperazine 100-01-6, 4-Nitroaniline, reactions 121-44-8, Triethylamine, reactions 814-68-6, Acryloyl chloride 7632-00-0, Sodium nitrite
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis and photoinduced birefringence of azo polymers for reversible optical storage)

L72 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1994:164225 HCAPLUS
 DOCUMENT NUMBER: 120:164225
 TITLE: A condensation process for the preparation of enantiomers of dropropizine
 INVENTOR(S): Paradisi, Gianbattista; Bombarda, Carlo; Polacci, Carlo
 PATENT ASSIGNEE(S): Bidachem S.p.A., Italy
 SOURCE: Eur. Pat. Appl., 4 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 575776	A2	19931229	EP 1993-108659	19930528
EP 575776	A3	19940413		
EP 575776	B1	19990331		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL				
AT 178324	T	19990415	AT 1993-108659	19930528
ES 2130190	T3	19990701	ES 1993-108659	19930528
PRIORITY APPLN. INFO.:		IT 1992-MI1554	A	19920624

OTHER SOURCE(S): CASREACT 120:164225
GI

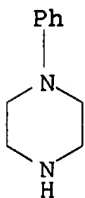


AB (R)-dropropizine I and (S)-dropropizine II enantiomers of high optical purity are prepared by condensing 1-phenylpiperazine with the corresponding (S)-3-halo-1,2-propanediol or (R)-3-halo-1,2-propanediol, especially the chloro derivs. This high-yield process can be economically practiced on an industrial scale and overcomes prior-art problems of intermediate instability and handling.

IT 92-54-6, 1-Phenylpiperazine
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant, in preparation of high optical purity
dropropizine enantiomers)

RN 92-54-6 HCAPLUS

CN Piperazine, 1-phenyl- (CA INDEX NAME)



IC ICM C07D295-08

CC 28-16 (Heterocyclic Compounds (More Than One Hetero Atom))

IT 92-54-6, 1-Phenylpiperazine
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant, in preparation of high optical purity
dropropizine enantiomers)

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L95 ANSWER 1 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:739974 HCAPLUS

DOCUMENT NUMBER: 126:39448

TITLE: Organic electroluminescent device with
styrylamine derivatives

INVENTOR(S): Azuma, Hisahiro; Hosokawa, Chishio; Hironaka,
Yoshio

PATENT ASSIGNEE(S): Idemitsu Kosan Co, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 22 pp.

CODEN: JKXXAF

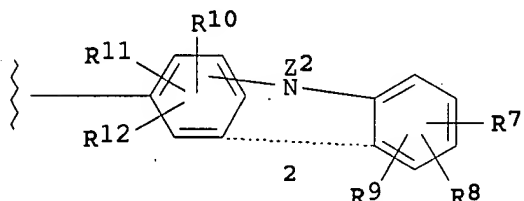
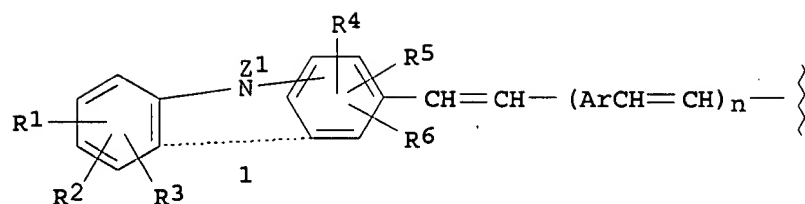
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

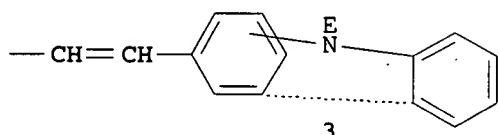
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 08239655	A	19960917	JP 1995-45504	199503 06
JP 3724833	B2	20051207	<--	
PRIORITY APPLN. INFO.:			JP 1995-45504	199503 06
			<--	
OTHER SOURCE(S):	MARPAT 126:39448			
GI				



I



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AB The device contains ≥ 2 electron-donating styryl compds. in an organic functional layer containing an emitting layer retained by a pair of electrodes, wherein the electron-donating styryl compound contains ≥ 1 vinylene(s) in which both terminals are connected to (hetero) aromatic cycles. The styryl compds. may be styrylamines I [R1-12 = H, halo, C1-10 alkyl, C1-10 alkoxy, C6-18 aryloxy, Ph, (substituted) NH₂, OH, Q; Z1, Z2, E = H, C1-10 alkyl, (substituted) C6-20 aryl, (substituted) C7-20 aralkyl, (substituted) C6-20 arylene, C4-20 divalent aromatic heterocycle, divalent (substituted) triarylamino, where the substituent is C1-10 alkyl, C1-10 alkoxy, C6-18 aryloxy, Ph, NH₂, CN, NO₂, OH, halo; the broken lines 1-3 indicate heterocyclic structures; n = 0, 1, 2]. The device emits blue light with high emitting effectivity and good color purity.

IT 116942-09-7P

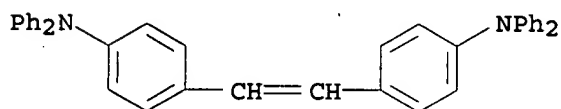
RL: DEV (Device component use); PNU (Preparation, unclassified);

PREP (Preparation); USES (Uses)

(hole-transporting substance; organic electroluminescent device with high luminance containing styrylamine derivative)

RN 116942-09-7 HCAPLUS

CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-diphenyl- (CA INDEX NAME)



IC ICM C09K011-06

ICS H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 116942-09-7P 144810-08-2P 183994-93-6P

RL: DEV (Device component use); PNU (Preparation, unclassified);

PREP (Preparation); USES (Uses)
 (hole-transporting substance; organic electroluminescent device with
 high luminance containing styrylamine derivative)

L95 ANSWER 15 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:580389 HCAPLUS

DOCUMENT NUMBER: 109:180389

TITLE: Electrophotographic photoreceptors containing
 cyanovinyl group-containing pyridine derivatives

INVENTOR(S): Matsumoto, Masakazu; Umehara, Masashige;
 Yoshihara, Yoshiyuki

PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

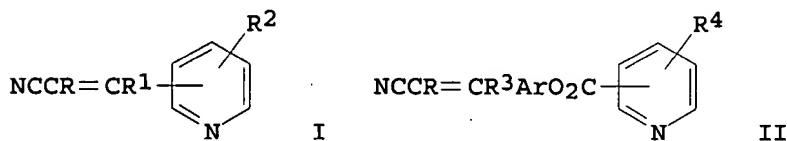
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63095454	A	19880426	JP 1986-240656	198610 09
JP 07003586	B	19950118	JP 1986-240656	198610 09

GI



AB The photoconductor layers of the title electrophotog. photoreceptors contain cyanovinyl group-containing pyridine derivs. I or II (R = cyano, alkoxy carbonyl, aryl, heterocyclyl; R1, R2 = H, aryl, heterocyclyl; R2, R4 = H, halo, cyano, NO2, halomethyl; Ar = arylene, heterocyclylene). The photoreceptors show good durability and low residual charge.

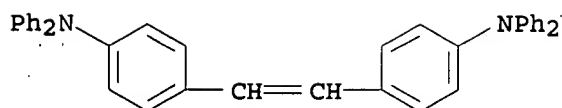
IT 116942-09-7

RL: USES (Uses)

(electrophotog. charge carrier transporting agent,
 additives for photoconductors containing)

RN 116942-09-7 HCAPLUS

CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-diphenyl- (CA INDEX NAME)

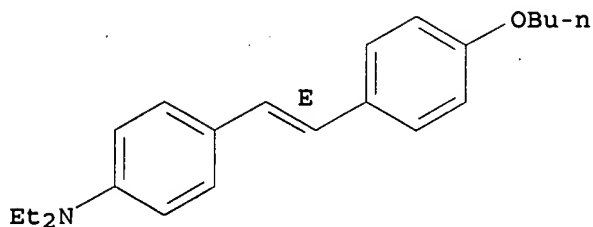


IC ICM G03G005-05
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT 129-79-3, 2,4,7-Trinitro-9-fluorenone 85171-94-4 116942-07-5
 116942-08-6 116942-09-7 116942-10-0
 RL: USES (Uses)
 (electrophotog. charge carrier transporting agent,
 additives for photoconductors containing)

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L96 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1996:419404 HCAPLUS
 DOCUMENT NUMBER: 125:208253
 TITLE: Studies of photochemically induced structure transfer from stilbene chromophores onto a liquid crystalline phase
 AUTHOR(S): Fischer, Th.; Seeboth, A.
 CORPORATE SOURCE: Institut fuer Angewandte Chemie, Berlin, D-12489, Germany
 SOURCE: Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (1996), 281, 179-186
 CODEN: MCLCE9; ISSN: 1058-725X
 PUBLISHER: Gordon & Breach
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The photoinduced structure transfer from different stilbene chromophores onto a nematic liquid crystalline phase was investigated depending on the specific chromophore structure and the rate consts. of the E-Z photoisomerization. No linear correlation was found between the rate consts. of the E-Z isomerization and the overall mol. lengths of the 4-N,N-dialkylamino-4'-alkoxystilbenes. The rate consts. decreased with an increasing number of carbon atoms in both hydrocarbon chains of the 4-N,N-dialkylamino group. In contrast, the length of the 4'-alkoxy group only had a small influence on the rate consts. of the E-Z photoisomerization. The light transmittance of the stilbene-LC system in a display changed as a consequence of the photochem. induced structure transfer from stilbene chromophores onto the liquid crystalline mols. The effect of the structure transfer from the chromophore onto the LC phase has a tendency to grow with the increasing stilbene mol. length.
 IT 179677-50-0 180967-93-5
 RL: PEP (Physical, engineering or chemical process); PROC (Process) (photoinduced structure transfer from stilbene chromophores embedded in liquid crystal bulk into nematic liquid crystalline phase)
 RN 179677-50-0 HCAPLUS
 CN Benzenamine, 4-[(1E)-2-(4-butoxyphenyl)ethenyl]-N,N-diethyl- (9CI) (CA INDEX NAME)

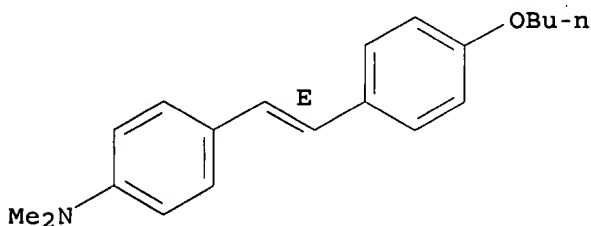
Double bond geometry as shown.



RN 180967-93-5 HCAPLUS

CN Benzenamine, 4-[(1E)-2-(4-butoxyphenyl)ethenyl]-N,N-dimethyl- (9CI)
(CA INDEX NAME)

Double bond geometry as shown.



CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 75

IT 2844-24-8 82197-96-4, ZLI1695 142300-84-3 179677-49-7
179677-50-0 179677-51-1 179677-52-2 180967-89-9
180967-93-5 180968-00-7 180968-04-1 180968-07-4
180968-10-9 180968-13-2 180968-16-5 180968-18-7 180968-20-1
180968-22-3 180968-24-5 180968-26-7 180968-28-9 180968-30-3
180968-32-5 180968-34-7 180968-36-9

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(photoinduced structure transfer from stilbene
chromophores embedded in liquid crystal bulk into nematic liquid
crystalline phase)

L96 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:354976 HCAPLUS

DOCUMENT NUMBER: 125:127440

TITLE: Photochemically induced structure transfer from
analogous azobenzenes and stilbenes onto a
liquid crystalline phase

AUTHOR(S): Fischer, Thorsten; Ruhmann, Ralf; Seeboth, Arno

CORPORATE SOURCE: Inst. Angewandte Chemie, Abteilung
Funktionsmaterialien, Berlin, 12489, Germany

SOURCE: Journal of the Chemical Society, Perkin
Transactions 2: Physical Organic Chemistry (
1996), (6), 1087-1090

CODEN: JCPKBH; ISSN: 0300-9580

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The photoinduced structure transfer from different

4-N,N-diethylamino-4'-alkoxyazobenzenes and analogous stilbenes onto

a nematic liquid crystalline phase has been investigated. The structure transfer caused by the azobenzenes was found to be 7-8 times smaller than for the corresponding stilbenes. The photoinduced E \rightarrow Z isomerization of the azobenzenes occurred in the liquid crystal more slowly than the thermal back reaction. In contrast, despite lower rate consts. for the E \rightarrow Z photoisomerization, the stilbenes under investigation brought about a greater structure transfer because no thermal back reaction was found at 25°C. Investigations carried out with the azobenzenes in ethanol and cyclohexane showed the great influence of the polarity of the surrounding medium on the ratio between the rate consts. for the E \rightarrow Z photoisomerization and the thermal Z \rightarrow E back reaction. This ratio $k_{E \rightarrow Z}/k_{Z \rightarrow E, therm}$ increased at 25°C from ca. 0.15-0.5 in the highly polar liquid crystal to ca. 13-19 in ethanol and nearly 500 in the apolar cyclohexane. This paper concludes that only the investigated stilbenes are suitable for photoaddressed displays using highly polar, thermotropic liquid crystals.

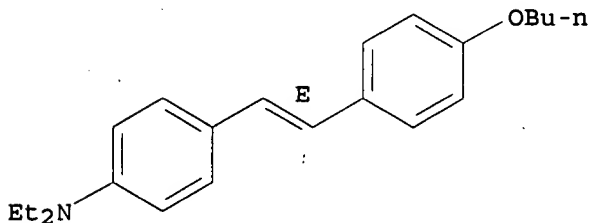
IT 179677-50-0

RL: PEP (Physical, engineering or chemical process); PROC (Process) (photochem. induced structure transfer from analogous azobenzenes and stilbenes onto liquid crystalline phase)

RN 179677-50-0 HCAPLUS

CN Benzenamine, 4-[(1E)-2-(4-butoxyphenyl)ethenyl]-N,N-diethyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 82197-96-4, ZLI 1695 179677-49-7 179677-50-0
179677-51-1 179677-52-2

RL: PEP (Physical, engineering or chemical process); PROC (Process) (photochem. induced structure transfer from analogous azobenzenes and stilbenes onto liquid crystalline phase)

=> d 197 ibib abs hitstr hitind

L97 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:419404 HCAPLUS

DOCUMENT NUMBER: 125:208253

TITLE: Studies of photochemically induced structure transfer from stilbene chromophores onto a liquid crystalline phase

AUTHOR(S): Fischer, Th.; Seeboth, A.

CORPORATE SOURCE: Institut fuer Angewandte Chemie, Berlin, D-12489, Germany

SOURCE: Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals

and Liquid Crystals (1996), 281,
179-186

CODEN: MCLCE9; ISSN: 1058-725X

PUBLISHER:

Gordon & Breach

DOCUMENT TYPE:

Journal

LANGUAGE:

English

AB The photoinduced structure transfer from different stilbene chromophores onto a nematic liquid crystalline phase was investigated depending on the specific chromophore structure and the rate consts. of the E-Z photoisomerization. No linear correlation was found between the rate consts. of the E-Z isomerization and the overall mol. lengths of the 4-N,N-dialkylamino-4'-alkoxystilbenes. The rate consts. decreased with an increasing number of carbon atoms in both hydrocarbon chains of the 4-N,N-dialkylamino group. In contrast, the length of the 4'-alkoxy group only had a small influence on the rate consts. of the E-Z photoisomerization. The light transmittance of the stilbene-LC system in a display changed as a consequence of the photochem. induced structure transfer from stilbene chromophores onto the liquid crystalline mols. The effect of the structure transfer from the chromophore onto the LC phase has a tendency to grow with the increasing stilbene mol. length.

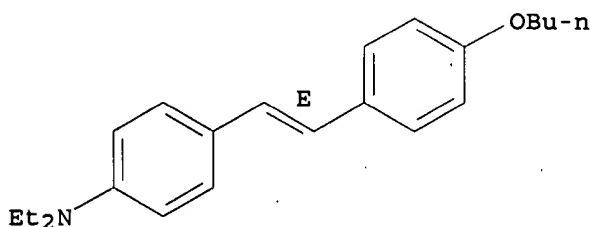
IT 179677-50-0 180967-93-5

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(photoinduced structure transfer from stilbene
chromophores embedded in liquid crystal bulk into nematic liquid
crystalline phase)

RN 179677-50-0 HCAPLUS

CN Benzenamine, 4-[(1E)-2-(4-butoxyphenyl)ethenyl]-N,N-diethyl- (9CI)
(CA INDEX NAME)

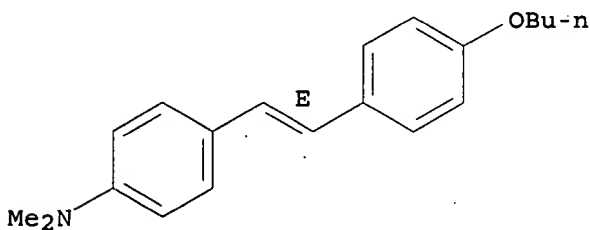
Double bond geometry as shown.



RN 180967-93-5 HCAPLUS

CN Benzenamine, 4-[(1E)-2-(4-butoxyphenyl)ethenyl]-N,N-dimethyl- (9CI)
(CA INDEX NAME)

Double bond geometry as shown.



CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)

Section cross-reference(s): 75

IT 2844-24-8 82197-96-4, ZLI1695 142300-84-3 179677-49-7
179677-50-0 179677-51-1 179677-52-2 180967-89-9
180967-93-5 180968-00-7 180968-04-1 180968-07-4
180968-10-9 180968-13-2 180968-16-5 180968-18-7 180968-20-1
180968-22-3 180968-24-5 180968-26-7 180968-28-9 180968-30-3
180968-32-5 180968-34-7 180968-36-9

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(photoinduced structure transfer from stilbene
chromophores embedded in liquid crystal bulk into nematic liquid
crystalline phase)

=> d 198 ibib abs hitstr hitind 1,10

L98 ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:390274 HCAPLUS

DOCUMENT NUMBER: 125:59252

TITLE: Vinyl monomers bearing chromophore moieties and
their polymers. I. Initiation and photochemical
behavior of N-acryloyl-N'-phenylpiperazines and
their polymers

AUTHOR(S): Li, Fu-Mian; Chen, Shunag-Ji; Li, Zi-Chen; Qiu,
Jian

CORPORATE SOURCE: Dep. Chem., Peking Univ., Beijing, 100871, Peop.
Rep. China

SOURCE: Journal of Polymer Science, Part A: Polymer
Chemistry (1996), 34(10), 1881-1888
CODEN: JPACEC; ISSN: 0887-624X

PUBLISHER: Wiley

DOCUMENT TYPE: Journal

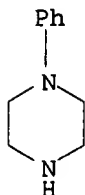
LANGUAGE: English

AB Two novel acrylic monomers bearing aromatic tertiary amino groups,
i.e., N-acryloyl-N'-phenylpiperazine (APP) and N-methacryloyl-N'-
phenylpiperazine (MPP) are synthesized by the reaction of
N-phenylpiperazine and the corresponding acryloyl chlorides in the
presence of triethylamine. They can be polymerized easily by using AIBN
as an initiator or photopolymerized without any sensitizer. The
photochem. behavior of APP, MPP, and their polymers are explored by
recording the fluorescence spectra in solution. It has been found that
the fluorescence intensities of these monomers are dramatically
lower than those of their polymers in the same chromophore concentration,
and such phenomenon is termed as "structural self-quenching effect"
(SSQE). The strong fluorescence of these polymers can be quenched
by adding electron-deficient monomers which have no chromophore
moieties such as Me methacrylate (MMA), acrylonitrile (AN), etc.,
and their Stern-Volmer consts. are determined. It is observed that the
higher the electron-deficiencies of the quenchers, the higher the
Stern-Volmer consts., which means stronger quenching effect. The
SSQE displayed by APP and MPP make them useful as probes to pursue
their photopolymerization process. As polymerizable aromatic tertiary amines,
APP and MPP themselves or combining with organic peroxides such as BPO
can initiate the photopolymerization or thermal polymerization of vinyl monomers
such as MMA, AN by free radical nature, and at the same time enter
the polymer chain.

IT 92-54-6, N-Phenylpiperazine

RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant in monomer preparation; preparation and initiation and
photochem. behavior of N-acryloyl-N'-phenylpiperazines
and their polymers)

RN 92-54-6 HCAPLUS
 CN Piperazine, 1-phenyl- (CA INDEX NAME)



CC 35-4 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 36, 73
 IT 92-54-6, N-Phenylpiperazine 814-68-6, Acryloyl chloride
 920-46-7, Methacryloyl chloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant in monomer preparation; preparation and initiation and
 photochem. behavior of N-acryloyl-N'-phenylpiperazines
 and their polymers)

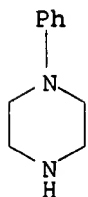
L98 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1966:429937 HCAPLUS
 DOCUMENT NUMBER: 65:29937
 ORIGINAL REFERENCE NO.: 65:5577b-d, 5578a-c
 TITLE: Amine-ketone addition products
 INVENTOR(S): Lawton, William R.
 SOURCE: 53 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 655926		19650518	BE	196411 18
FR 1416094			FR	
PRIORITY APPLN. INFO.:			US	196311 21

AB Secondary and tertiary amines are treated with a cyclic polyketone, such as ninhydrin (I), hydrindantin (II), isatin (III), or alloxan (IV) (amine:ketone molar ratio 2:1-5:1) to give slightly colored addition products which can be either (a) decomposed at 50-160°, (b) treated with a polyketone, or (c) treated with a primary amine to give stable dyes. The addition products can be used in the preparation of heat-sensitive copy sheets. Thus, 4.0 g. morpholine (V) is added to a solution of 2.0 g. I in 20 g. alc., and the mixture is heated 10 min. at 78° and kept 3 hrs. at room temperature to give bright yellow crystals which become purple-brown at 115-25°. Similarly prepared are (weight ratio and reactants, appearance, and m.p. given): 4:2 2,6-dimethylmorpholine (VI):I, pale yellow, 103-8° (decomposition); 4:2 1,2,4-trimethylpiperazine (VII):I, white, 103-8° (decomposition); 3.8:1.8 piperidine (VIII):I,

orange-yellow, 123-6° (decomposition); 3.8:1.8 N-methylpiperazine (IX):I, yellow, 110-12° (decomposition); 2:1 dicyclohexylamine (X):I, yellow-chamois, 83-6° (decomposition); 4:1 Bu₂NH (XI):I, white, 127-9° (decomposition); 1.4: 0.7 N-ethylcyclohexylamine (XII):I, cream, 153-5° (decomposition); 4:1 N-methylfurfurylamine (XIII):I, orange-yellow, 93-6° (decomposition); 3.8:1 V:II, yellow, 128-38° (decomposition); 3.8:1.8 VIII:II, orange-yellow, 134-6° (decomposition); 3.8:1.8 VII:II, white, 177-9° (decomposition); 4:1 X:II, white, 165-70° (decomposition); 2:1 N-isopropylcyclohexylamine:II, pale yellow, 156-64° (decomposition); 2:1 XII:II, pale yellow 153-8° (decomposition); 4.4:2 VIII:III, white, 130-40° (decomposition); 4.4:2 V:III, white, 123-7° (decomposition); 4.4:2 VI:III, white 162-5° (decomposition); 4.4:2 IV:III, pale yellow, 142-50° (decomposition); 2.2:1 XIII:III, cream, 109-14° (decomposition); 2.2:1 pyrrolidine:III, white, 148-50° (decomposition); (3.8:1.8 V:IV) (XIV) white, 123-7° (decomposition); 3.8:1.8 VIII:IV, white, 154-8° (decomposition); 3.8:1.8 VII:IV, white, 165-7° (decomposition); 4:2 1,2,3,4-tetrahydroquinoline (XV):IV, cream, >250°; (4:2 X:IV) (XVI), white, 152-60° (decomposition); 4:2 XII:IV white, -; 4:2 IX:IV, white, >230°; 4:2 Et₂NH:IV, lavender, -; 4:2 Pr₂NH:IV, lavender, 114-22° (decomposition); 4:2 iso-Pr₂NH:IV, white, 180-3° (decomposition); 2:1 piperazine (XVII):I, brown, above 200°:2:1 XVII:III, yellow-chamois, 208-15° (decomposition); 2:1 XVII:IV, lavender, >220°; 4:2 XI:IV, white 113-16°; 4:1 XV:I, yellow-orange, 168-70°; 4:2 indoline:IV, >210°; 4:2 indoline:1,3-indandione, green, 195-200°; 4:2 1-phenylpiperazine (XVIII):I, chamois, 142-5°; 4:2 XVIII:III, cream, 145-6°; 4:2 2,6-dimethylpiperidine:IV, -, 145-8° (decomposition). A mixture of XIV and I is applied on filter paper and heated 3 sec. at 149° to give a purple-black color. A 2% solution of XVI in MeOH is applied on silk paper (45 kg.), the paper is dried, a warm 2% solution of I in MeOH is applied, and the paper is dried to give <0.9 kg. coating per 279 m.2 The prepared copy paper and an original are introduced into a Model 45 Thermofax to give a purple-brown reflex copy on a white background.

IT 92-54-6, Piperazine, 1-phenyl-
(reaction products with ketones, as dyes for
photothermography)
RN 92-54-6 HCAPLUS
CN Piperazine, 1-phenyl- (CA INDEX NAME)



CC 46 (Dyes)
IT 75-64-9, tert-Butylamine 92-54-6, Piperazine, 1-phenyl-
107-15-3, Ethylenediamine 107-45-9, Butylamine,
1,1,3,3-tetramethyl- 108-91-8, Cyclohexylamine 109-01-3,
Piperazine, 1-methyl- 109-89-7, Diethylamine 110-58-7,
Pentylamine 110-85-0, Piperazine 110-89-4, Piperidine
111-26-2, Hexylamine 111-92-2, Dibutylamine 120-85-4,

Piperazine, 1,2,4-trimethyl- 123-75-1, Pyrrolidine 141-91-3,
 Morpholine, 2,6-dimethyl- 142-84-7, Dipropylamine 496-15-1,
 Indoline 618-36-0, Benzylamine, α -methyl- 635-46-1,
 Quinoline, 1,2,3,4-tetrahydro- 1195-42-2, Cyclohexylamine,
 N-isopropyl- 4753-75-7, Furfurylamine, N-methyl- 5459-93-8,
 Cyclohexylamine, N-ethyl-
 (reaction products with ketones, as dyes for
 photothermography)

=> d 199 ibib abs hitstr hitind 1,4

L99 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1993:222628 HCAPLUS

DOCUMENT NUMBER: 118:222628

TITLE: Electroluminescent device optionally using
 bis(aminophenyl)ethylene-derived hole-supplying
 film

INVENTOR(S): Kuroda, Masami; Amano, Masayo; Kosho, Noboru

PATENT ASSIGNEE(S): Fuji Electric Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP.04264189	A	19920918	JP 1991-22461	199102 18

PRIORITY APPLN. INFO.: <-- JP 1991-22461

199102
18

OTHER SOURCE(S): MARPAT 118:222628

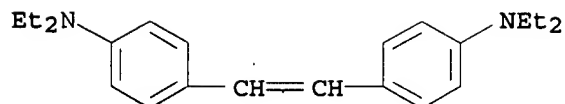
AB The title device has (1) a pair of electrodes for supplying
 electrons and holes and for charging layers sandwiched by the
 electrodes and (2) the sandwiched layers, i.e., a light-emitting
 layer and a charge-supplying layer comprising (a) an
 electron-supplying layer for conducting electrons from the minus
 electrode to the light-emitting layer and/or (b) a hole-supplying
 layer comprising p-R1R2NC6H3R3-p-CR4:CR3C6H3R6NR7R8 [R1-2, R7-8 =
 (substituted) alkyl, aryl, alkenyl, aralkyl, thenyl; R3-6 = H, halo,
 alkyl, alkoxy, OH, aryl] for conducting holes from the plus
 electrode to the light-emitting layer, in which the light-emitting
 layer recombines the electrons and the holes. The device with the
 hole-supplying layer with improved film forming property shows high
 reliability.

IT 72057-75-1 116942-09-7

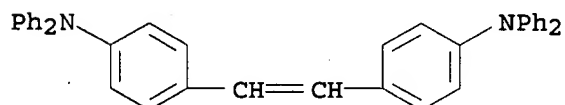
RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (vapor deposition of, for hole-supplying film, for
 electroluminescent device)

RN 72057-75-1 HCAPLUS

CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-diethyl- (CA INDEX NAME)



RN 116942-09-7 HCAPLUS
 CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-diphenyl- (CA INDEX NAME)



IC ICM C09K011-06
 ICS H05B033-14
 CC 73-11 (Optical, Electron, and Mass Spectroscopy
 and Other Related Properties)
 Section cross-reference(s): 42
 IT 1931-49-3 72057-75-1 116942-09-7
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (vapor deposition of, for hole-supplying film, for
 electroluminescent device)

L99 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1980:13666 HCAPLUS

DOCUMENT NUMBER: 92:13666

TITLE: Color electrophotographic toners

INVENTOR(S): Takashima, Yuji; Ishida, Eisuke; Nishiguchi,
 Hisanori

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 54081848	A	19790629	JP 1977-138184	197711 16
JP 56020546	B	19810514	JP 1977-138184	197711 16

PRIORITY APPLN. INFO.: <--

AB Color electrophotog. toners are coated with a transparent coating composition containing Cu iodide. The color toners may contain a dye selected from 3 basic-color dyes and a colorless dye precursor which forms a complementary color dye (preferably thermally sublimable). The toners are especially useful in a single-exposure color electrophotog. process in which the color toners are electrostatically coated on a charged electrophotog. sheet, and then the sheet is imagewise exposed and developed. Thus, 5 parts of C. I. Acid Blue 23 was

dispersed in a 20% epoxy resin solution (in methyl cellosolve) 500, and the dispersion was spray-dried to give blue particles. The particles were then coated with a composition consisting of Cu iodide 5, poly(vinyl acetate) 0.5, and MeCN to give a color electrophotog. toner. The toner was spread over a charged electrophotog. paper, then the paper was imagewise exposed, and developed by shaking off the loose toner particles. The resolution of the images was as high as 12 lines/mm.

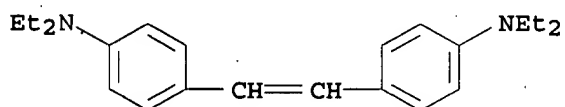
IT 72057-75-1

RL: USES (Uses)

(color electrophotog. toners containing, coated with copper iodide)

RN 72057-75-1 HCAPLUS

CN Benzenamine, 4,4'-(1,2-ethenediyl)bis[N,N-diethyl- (CA INDEX NAME)



IC G03G009-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

IT 90-94-8 3520-42-1 8004-91-9 33340-33-9 64060-12-4

72057-75-1

RL: USES (Uses)

(color electrophotog. toners containing, coated with copper iodide)

=> d 1100 ibib abs hitstr hitind 1,3

L100 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1990:149003 HCAPLUS

DOCUMENT NUMBER: 112:149003

TITLE: Photoconductors containing styrene derivatives and trisazophenyldibenzindole derivatives or their analogs and their use for electrophotographic photoreceptors

INVENTOR(S): Ishibashi, Setsuo; Fujio, Katsunori; Sasaki, Nobuhiko

PATENT ASSIGNEE(S): Alps Electric Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01142730	A	19890605	JP 1987-302788	19871130

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PRIORITY APPLN. INFO.:

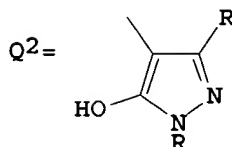
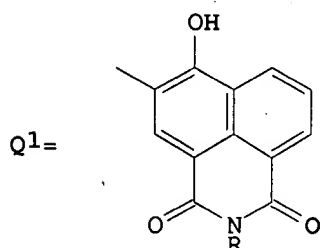
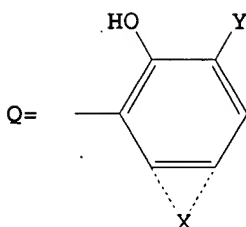
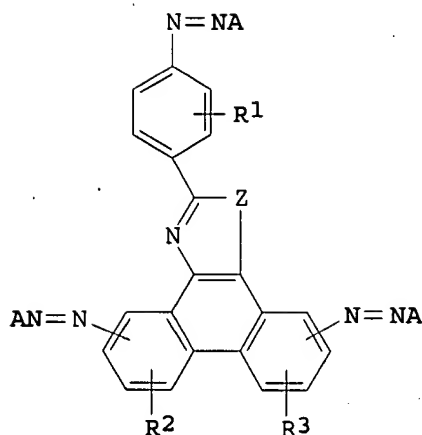
JP 1987-302788

198711

30

GI

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AB Photoconductors containing ≥ 1 styrene derivative of the structures Ar1Ar2C:CAr3Ar4 and $\text{Ar1Ar2C:CH(CH:CH)nCH:CAr3Ar4}$ [Ar1-Ar4 = (un)substituted aryl; $n = 0, 1$] as charge-transporting materials and at least one trisazophenyldibenzindole derivs. or their analogs [I; R-R3 = H, lower alkyl, aryl, alkoxy carbonyl, aryloxy carbonyl, acyl, halo, monovalent organic group; Z = (un)substituted NH or CH2, S, O, Se; A = Q-Q2, CH(COMe)CONR2; X = atoms to complete (un)substituted hydrocarbon or heterocyclic ring; Y = CONR2, CO2R] as charge-generating materials and electrophotog. photoreceptors containing the above photoconductors in photosensitive layers on a conductive support are described and have a high sensitivity and low residual potential with good durability.

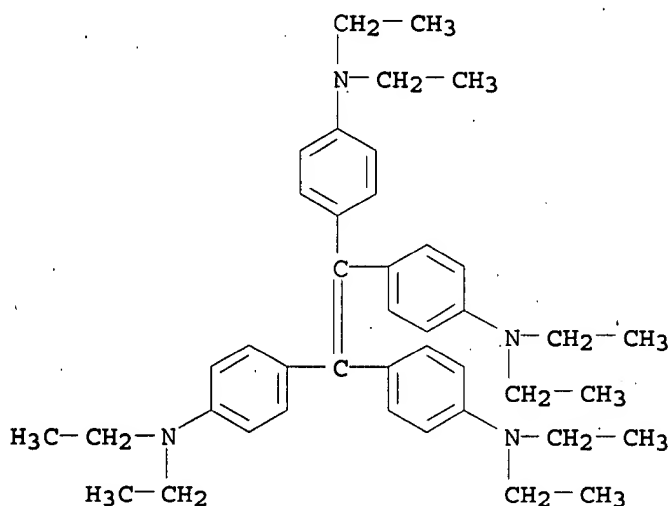
IT 109995-80-4

RL: USES (Uses)

(charge-transporting material, for electrophotog.
photoconductors)

RN 109995-80-4 HCAPLUS

CN Benzenamine, 4,4',4'',4'''-(1,2-ethenediylidene)tetrakis [N,N-diethyl-
(9CI) (CA INDEX NAME)



IC ICM G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT 632-51-9 1261-86-5 1450-63-1 10019-24-6 25229-66-7
 68161-05-7 109995-78-0 109995-79-1 109995-80-4
 109995-81-5 109995-82-6 125245-00-3 125245-06-9 125767-46-6
 RL: USES (Uses)
 (charge-transporting material, for electrophotog.
 photoconductors)

L100 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1987:506291 HCAPLUS
 DOCUMENT NUMBER: 107:106291
 TITLE: Electrophotographic photoreceptor
 INVENTOR(S): Ueda, Hideaki
 PATENT ASSIGNEE(S): Minolta Camera Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp:
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62030255	A	19870209	JP 1985-170191	198507 31
JP 05019701	B	19930317	JP 1985-170191	198507 31

PRIORITY APPLN. INFO.: <--

AB The title electrophotog. photoreceptor contains a styryl compound R1RC:CR2R3 (I) or R1RC:CH(CH:CH)nCH:CR2R3 [R, R1-R3 = (substituted) aryl; n = 0, 1]. The photoreceptor has high photosensitivity and shows excellent durability. An Al substrate was coated successively

with a 0.3- μ m charge-generating layer composed of chlorodiane blue and Vylon 200 (polyester resin) and with a 15- μ m charge-transfer layer composed of I (R, R1 = 4-C6H4NMe2; R2, R3 = Ph) and Panlite K-1300 (polycarbonate resin). The obtained photoreceptor showed an initial potential of -620 V, an exposure required for half decay of voltage of 5.8 lx-s, and a residual potential of 5 V.

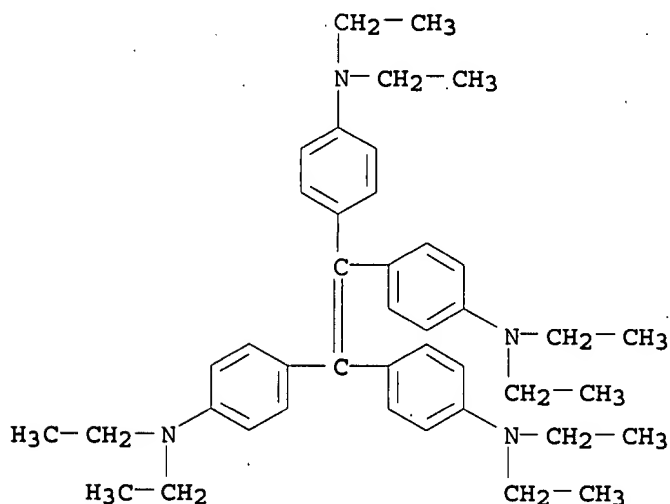
IT 109995-80-4

RL: USES (Uses)

(electrophotog. photoreceptor with charge-transfer layer containing)

RN 109995-80-4 HCAPLUS

CN Benzenamine, 4,4',4'',4'''-(1,2-ethenediylidene)tetrakis[N,N-diethyl-
(9CI) (CA INDEX NAME)



IC ICM G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 1261-86-5 59260-77-4 109995-78-0 109995-79-1
109995-80-4 109995-81-5 109995-82-6 109995-83-7
109995-84-8 109995-85-9

RL: USES (Uses)

(electrophotog. photoreceptor with charge-transfer layer containing)

=> d 1101 ibib abs hitstr hitind 1-2

L101 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1980:523695 HCAPLUS

DOCUMENT NUMBER: 93:123695

TITLE: Electrophoretic migration imaging process

INVENTOR(S): Kaukeinen, Joseph Y.; Wright, Hal E.

PATENT ASSIGNEE(S): Eastman Kodak Co., USA

SOURCE: U.S., 20 pp. Cont.-in-part of U.S. Ser. No. 645,005, abandoned.

CODEN: USXXAM

DOCUMENT TYPE:

Patent

LANGUAGE:

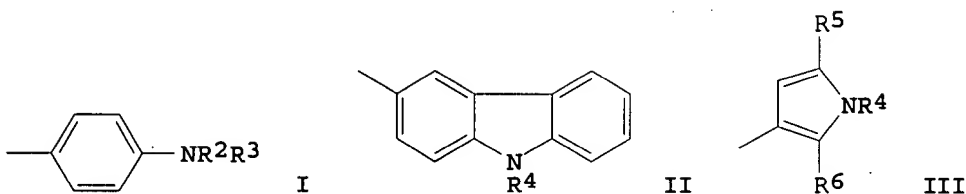
English

FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4197120	A	19800408	US 1977-764680	19770202
CA 1079109	A1	19800610	CA 1976-264872	19761104
GB 1574816	A	19800910	GB 1976-53781	19761223
			US 1975-645005	19751229

PRIORITY APPLN. INFO.:

GI



AB Elec. photosensitive colorants (absorption maximum >400 nm) for use in the electrophoretic migration imaging process are derived from compds. of the general formula ZCRCR1Qm[CRCR1Z]n (Z is I, II, or III, where R, R1 = H, CN; R2-R6 = C1-8 alkyl, Ph, MeC6H4, EtC6H4, or R1R2 together form a pyrrolidinyl or piperidino group; Q = C6-20 heterocyclic aromatic groups; m = 1-2; n = 0-1). Thus, mixture of 9,10-bis[4-(tolylamino)styryl]anthracene 1, the copolymer of vinyltoluene, lauryl methacrylate, Li methacrylate, and methacrylic acid (56:40:3.6:0.4) 1, Solvesso 100 (Exxon Corp.) 12.2, and stainless steel balls 110 g was ball-milled for 1 wk, diluted with a 40% solution of Picotex 100 35.8 g in Isopar G by ultrasonic agitation, and used successfully for neg. image formation on a Nesa glass plate electrode (3500 ft-candle radiation, 0.5-2 kV voltage between electrodes, translational speed of the Nesa plate 25 cm/s).

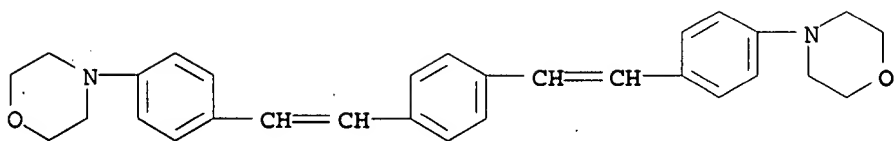
IT 62555-98-0

RL: USES (Uses)

(electrophotosensitive colorant, for electrophoretic migration imaging process)

RN 62555-98-0 HCAPLUS

CN Morpholine, 4,4'-[1,4-phenylenebis(2,1-ethenediyl-4,1-phenylene)]bis-(9CI) (CA INDEX NAME)



IC G03G013-01; G03G017-04

INCL 430032000

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

IT 2131-99-9 23779-46-6 34259-78-4 41737-79-5 55035-42-2
 55035-43-3 55035-47-7 62555-81-1 62555-82-2 62555-84-4
 62555-85-5 62555-86-6 62555-87-7 62555-88-8 62555-90-2
 62555-91-3 62555-92-4 62555-93-5 62555-94-6 62555-95-7
 62555-96-8 62555-98-0 62555-99-1 62556-02-9
 62556-04-1 62556-05-2 62608-15-5 63804-66-0 63804-67-1
 74860-16-5 74860-17-6 74860-18-7

RL: USES (Uses)

(electrophotosensitive colorant, for electrophoretic migration imaging process)

L101 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1977:163551 HCAPLUS

DOCUMENT NUMBER: 86:163551

TITLE: Electrophoretic migration imaging process

AUTHOR(S): Wright, Hal Eldon; Kaukeinen, Joseph Y.

CORPORATE SOURCE: UK

SOURCE: Research Disclosure (1976), 150, 51-6 (No. 15029)

CODEN: RSDSBB; ISSN: 0374-4353

DOCUMENT TYPE: Journal; Patent

LANGUAGE: English

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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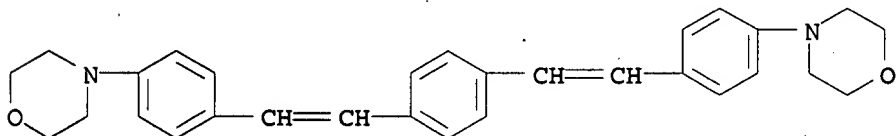
RD 150029		19761010		
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PRIORITY APPLN. INFO.: RD 1976-150029
 19761010

GI For diagram(s), see printed CA Issue.

AB Elec. photosensitive pigments having an absorption maximum in the visible region and having the structure I [R1-R5 = H, NO2, CN, halo, C1-8 alkoxy, C1-8 alkyl, carbocyclic or heterocyclic ring, C1-4 carboxy ester or amide; Z = atoms required to complete C5-14 carbocyclic or heterocyclic aromatic ring; Z1 = C6-20 carbocyclic or heterocyclic aromatic ring; m = 1 or 2; n = 0 or 1] are suitable for use in photoelectrophoretic migration imaging processes. The pigments are highly colored materials and tend to have a yellow, orange or magenta hue. The pigments are also highly insol. in most organic solvents and are particularly suitable in preparing pigment dispersions using elec. insulating liquid aliphatic hydrocarbons. Thus, the pigment II 1, lauryl methacrylate-Li methacrylate-methacrylic acid-vinyltoluene (40:3.6:4:56) polymer 1, Solvesso 100 12.2 g were ball-milled using stainless steel balls (3 mm diameter) 100 g in a glass jar at 115 revolutions/min for 1 week and diluted with a 40% solution of Piccotex 100 in Isopar G 35.8 g to give a photoelectrophoretic imaging dispersion.

IT 62555-98-0
 RL: USES (Uses)
 (elec. photosensitive pigment, for
 photoelectrophoretic imaging dispersions)
 RN 62555-98-0 HCAPLUS
 CN Morpholine, 4,4'-[1,4-phenylenebis(2,1-ethenediyl-4,1-phenylene)]bis-
 (9CI) (CA INDEX NAME)



CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic
 Processes)
 IT 2131-99-9 23779-46-6 41737-79-5 55035-42-2 55035-43-3
 55035-47-7 62555-81-1 62555-82-2 62555-83-3 62555-84-4
 62555-85-5 62555-86-6 62555-87-7 62555-88-8 62555-89-9
 62555-90-2 62555-91-3 62555-92-4 62555-93-5 62555-94-6
 62555-95-7 62555-96-8 62555-97-9 62555-98-0
 62555-99-1 62556-00-7 62556-01-8 62556-02-9 62556-03-0
 62556-04-1 62556-05-2 62608-15-5
 RL: USES (Uses)
 (elec. photosensitive pigment, for
 photoelectrophoretic imaging dispersions)

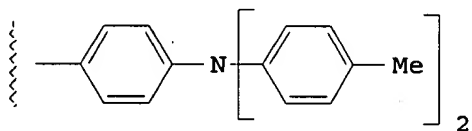
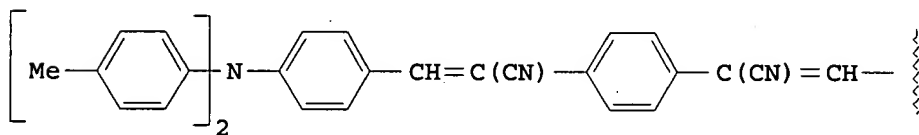
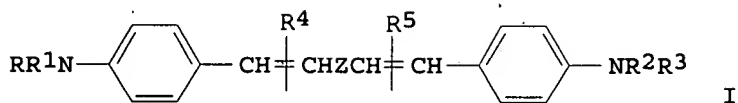
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L102 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 1980:119697 HCAPLUS
 DOCUMENT NUMBER: 92:119697
 TITLE: Multi-active photoconductive elements
 INVENTOR(S): Wright, Hal E.; Berwick, Martin A.
 PATENT ASSIGNEE(S): Eastman Kodak Co., USA
 SOURCE: U.S., 19 pp. Cont.-in-part of U.S. 4,111,693
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 7
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4175961	A	19791127	US 1978-892640	197804 03
US 4111693	A	19780905	US 1976-753390	197612 22
GB 1556877	A	19791128	GB 1977-1940	197701 18

CA 1109714	A1	19810929	CA 1977-290478	197711 08
			<--	
GB 1599166	A	19810930	GB 1977-53258	197712 21
			<--	
BE 862210	A1	19780622	BE 1977-183766	197712 22
			<--	
FR 2375632	A1	19780721	FR 1977-38733	197712 22
			<--	
FR 2375632	B1	19810102		197712 22
JP 53087227	A	19780801	JP 1977-153697	
			<--	
JP 60000664	B	19850109		
PRIORITY APPLN. INFO.:			US 1976-753390	A2 197612 22
			<--	
			US 1976-650318	A 197601 19
			<--	

GI



AB A multiactive photoconductive element having enhanced blue response, a synergistic sensitivity in the blue region of the visible spectrum, and improved panchromatic response in the visible region is composed of a photoconductor-containing layer in elec. contact with an aggregate photoconductive layer comprised of a continuous, elec. insulating polymer phase and a discontinuous phase dispersed therein

composed of a finely divided, particulate cocryst. complex of ≥ 1 polymer having an alkylidene diarylene group in a recurring unit and ≥ 1 pyrylium-type dye salt, and a compound of structure I ($R-R_3 = H$, C_1-18 alkyl, or aryl; $R_4, R_5 = H$ or an electron withdrawing group; $Z = aryl$). Thus, a suitable support was coated with a charge-generator layer (prepared according to US 3, 706, 554) containing Bisphenol A polycarbonate 900, 4-(4-dimethylaminophenyl)-2,6-diphenylthiapyrylium perchlorate 1.30, II 1.50, CH_2Cl_2 317.30, and 1,1,2-trichloroethane 211.50 g. Upon this layer was then coated a charge-transport layer prepared by dissolving Lexan 145 180.0 in $CHCl_3$ 1700 g over 1 h, adding the triptolylamine 120.0 g, and stirring an addnl. 0.5 h. The resulting element had a relative sensitivity of 6.3 (460 nm) vs. 1.0 for a control containing tri-p-tolylamine in place of II.

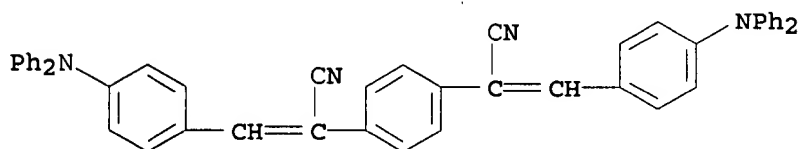
IT 34266-56-3

RL: USES (Uses)

(electrophotog. multiactive element with aggregate photoconductive layer containing)

RN 34266-56-3 HCAPLUS

CN 1,4-Benzenediacetonitrile, α, α' -bis[[4-(diphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)



IC G03G005-06; G03G005-14

INCL 430058000

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

IT 14039-00-0 24936-68-3, uses and miscellaneous 25037-45-0

34259-78-4 34266-56-3 41737-79-5 62555-85-5

62555-95-7 63804-60-4 63804-63-7 63804-66-0 63804-67-1

72861-30-4 72861-31-5 72861-32-6 72861-33-7 72861-34-8

72861-35-9 72861-36-0

RL: USES (Uses)

(electrophotog. multiactive element with aggregate photoconductive layer containing)

L102 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1971:525032 HCAPLUS

DOCUMENT NUMBER: 75:125032

TITLE: Bis(aminobenzylidene)arenediacetonitriles for use as photoconductors in electrophotographic recording materials

INVENTOR(S): Merrill, Stewart H.

PATENT ASSIGNEE(S): Eastman Kodak Co.

SOURCE: Ger. Offen., 29 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

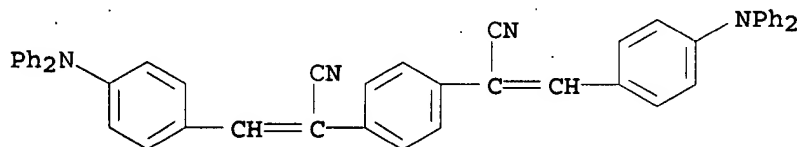
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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 DE 2054061 A 19710519 DE 1970-2054061 197011
 03
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 US 3653887 A 19720404 US 1969-874016 196911
 04
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 FR 2071857 A5 19710917 FR 1970-38858 197010
 28
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 GB 1319498 A 19730606 GB 1970-51758 197010
 30
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 PRIORITY APPLN. INFO.: US 1969-874016 A 196911
 04
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GI For diagram(s), see printed CA Issue.
 AB A high-sensitivity electrophotog. system is obtained when
 α, α' -bis[p-(diphenylamino)benzylidene]-p-
 benzenediacetonitrile (I) is used as the photoconductor. I and
 similar type compds. are prepared by heating a mixture of
 benzenediacetonitrile and formylarylamine dissolved in an organic
 solvent.
 IT 34266-56-3
 RL: USES (Uses)
 (photoconductor, for electrophotography)
 RN 34266-56-3 HCAPLUS
 CN 1,4-Benzenediacetonitrile, α, α' -bis[[4-
 (diphenylamino)phenyl]methylene]- (9CI) (CA INDEX NAME)



IC C07C; G03G
 CC 74 (Radiation Chemistry, Photochemistry, and Photographic Processes)
 IT 34259-77-3 34259-78-4 34259-79-5 34266-56-3
 34266-57-4
 RL: USES (Uses)
 (photoconductor, for electrophotography)

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